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The Battle With Tuberculosis

This month we give special attention to the subject of tuberculosis. It presents a great problem, which the physician is called upon to solve. It is his duty to seek all the knowledge that may prevent and all that may cure. May this journal help!

PHYSICIAN and public have been aroused at last to the supreme importance of the tubercle bacillus and the ravages it makes upon mankind. At last we have left the consideration of trifles and rarities, and are giving attention to the most important topic we as physicians can be called on to discuss, since it is still the Captain of the Hosts of Death. While pneumonia holds the first place in the great city, and in certain seasons kills its tens of thousands, it is yet limited as to location and season, while "thou hast all seasons for thine own, O Death," from tuberculosis. Moreover, much of the peril from the pneumococcus is due to its power of preparing the way for tuberculosis, of opening the door for the latter and furnishing a suitable soil for its development.

We stand ready to accept, and put to the test, any and every remedy that offers a fair chance of being effective in the treatment of this malady, and the public only asks us to show the way which it will follow. We shall not have to complain of any lack of enthusiastic support. But—we must not ask people to fall back upon ancient and time-discredited methods. There is little to be gained by sifting the old dust heap. The thoroughly tried- and-found-wanting remedies of the past are not good enough for the present. Unless we have something better to propose the public will "quack it" until we seize something that commends istelf as distinctly new and plausible.

One of Philadelphia's leading clinical teachers, a man who has upheld with credit the medical service of the Polyclinic since its foundation, has presented a new remedy for tuberculosis—a remedy of unquestioned power, but hitherto untested as a remedy. He has taken this from the animal kingdom, from which we are at present deriving such remarkable remedial principles. He has fortified his recommendation with a series of cases which give the distinct sensation of something unusual and presenting possibilities beyond the ordinary. We are

tolerably familiar with the usual exploitation of new remedies for tuberculosis, and the half-baked reasoning on which they are based, as well as the string of cases, easy ones, influenced mightily by suggestion and reported on the first evidence of temporary improvement as "cures." But Thomas J. Mays is not that sort, and his reports of case after case of well-advanced disease, in negroes who are little amenable to suggestive influences and with whom phthisis rages like fire among flax, are different.

There is no *a priori* reason why crotalin should not be beneficial. Nobody has given it any attention as a remedy; its tremendous power needs no demonstration; the similarity of its action to that of tuberculin is significant; the account given by Prof. Mays impresses us with the conviction that the remedy really does something, apart from any possible suggestive influence, and that that something was radically influential in accomplishing a cure.

The matter is now advanced to the final stage—it goes to the medical profession, to be tried out, to succeed, to fail, to be venomously opposed and enthusiastically advocated; and finally out of the whirling clouds of dust and smoke there will emerge —another failure or a success so notable as to be epochal.

Meanwhile, in another department we present a large fund of excellent contributed material, dealing with various phases of the tuberculosis problem, and have something to say ourselves anent the elements of symptomatic treatment of pulmonary consumption that are yet worthy of retention. Our great hope is that the material on tuberculosis in this issue may be of lasting service to the "family."

PROSTATIC INDEX

J. Henry Dowd, in *The Medical Record*, gives an interesting paper on the prostatic index as the pulse of the nervous system. This article differs from the common run of medical-journal papers in that Dr. Dowd does not content himself with describing his cases, but he goes ahead and cures them. Here is the way he does it:

A young man had frequent urination, with polyuria, the specific gravity of the urine 1010, acid minus; no albumin, sugar, casts, pus or crystals; phosphatic index four-fifths too low, crystals badly formed. The diagnosis: polyuria, due to no control of that vasomotor system, caused by nerve-cell starvation. Treatment: Eight raw eggs daily, phosphorus, strychnine and cannabis indica. A cure in eight weeks.

A youth showed frequent urination, with high specific gravity of urine, acid plus, phosphatic index one and three-fourths above normal. Treatment: Avoid all excesses, work, study and athletics; bromide of gold and arsenic three times a day. A cure in two months.

Another case showed severe pain in shoulders and hips without a history of rheumatism; the urine of normal specific gravity, acid minus, phosphatic index three-fifths too low. Diagnosis: Neurit's caused by nerve-cell starvation. Treatment: Raw eggs, phorphorus and strychnine. The pain ceased after forty-eight hours.

A lady experienced severe pain in the left ovary with marked prostration. The urine showed normal specific gravity, acid plus, a few pus-cells from the vulva, phosphatic index one too high. Treatment: Bromide of gold and arsenic. Cure in three weeks.

Dr. Dowd possesses the art of saying a whole lot in a very few words.

Overcaution has ruined as many people as lack of caution. Venture nothing, gain naught.

THE NEW AXE

When metal axes were first presented to mankind there was a good deal of objection to them. For one thing, they got rusty; which the stone axe never did. They were very expensive also, and the owner was much more likely to cut himself if he handled the metal axe incautiously, a thing that never happened with the old one. They offended the religious sentiment of the community, too, because if the gods had intended men to use pure metals they would have presented them to mankind; instead of which

the stone axe was prepared from the material exactly as nature intended it should be, and there was undeniably something more in the stone axe than the mere metal.

But the principal objection to the metal axe was the crass commercialism connected with it, for the axe could not be secured without paying somebody a profit, whereas any man who chose could go to the heap, select a piece of flint to suit himself, and fashion an axe to suit his needs without paying anybody a muskrat skin.

But somehow the metal axe won out!

That song is sweetest, bravest, best,
Which plucks the thistle-barb of care
From a despondent brother's breast
And plants a sprig of heartsease there.
—Andrew Downing.

CITO, TUTO ET JUCUNDE

How well those old masters worked. How clearly they thought; how concise and accurate were their expressions. To cure quickly, safely, pleasantly! How much more could we say? As I study this old maxim, it appears to me that it comprises all we can advance of practical utility. The studies of all the laboratories that ever were created, all the deep researches into pathology and kindred branches, are of value only in so far as they tend to aid us in the treatment of the sick.

I am afraid we are prone to forget this in considering the multifarious matters thrust upon our attention. This is unfortunately a truly human tendency. In his craving for gold the miser forgets that the gold is only of value for what it will bring.

Cito.—Here first the superiority of the alkaloidal- or active-principle-method shows forth, in the immense advantage of knowing what our remedies will do, and knowing that they will always do exactly what we expect of them. This gives us confidence. We can intervene boldly and powerfully in the forming stage of disease, because we are sure of our action. This gives a potency to our therapeutics never before possessed. By striking thus powerfully in the forming stage of a malady, we are often able to break it up before it has become seated in the tissues.

Consequently we who employ the active principles are firm believers in our power of jugulating disease. Those who are not personally familiar with the application of these remedies are almost as universally and just as strongly disbelievers of this fact. Each of us sees with his own eyes; we believe in jugulating disease because we can and do jugulate it; they do not believe in jugulating disease, because they can not and do not jugulate it.

Tuto.—It is to the enduring honor of Burggraeve that he devised for the first time a method of medication by which the most powerful toxic agents known to the materia medica could yet be used with absolute safety, for any person, at any age. Remedies like veratrine and aconitine, which the ordinary physician considers too perilous for use, are everyday matters to us, and are administered to the smallest infant. When anybody speaks to us of the "danger" in the use of these remedies, a broad smile is our answer. What perfect nonsense! There is not a possibility of harm, or of any danger, when given by the alkaloidal method. The doses are too small to do any harm in any case, even of idiosyncrasy; these doses are given quickly, because being the naked alkaloids, without any encumbering tannic acid or other dirt, they are very quickly absorbed and get to work so promptly that we can repeat the doses every five, fifteen or thirty minutes. We accumulate these little doses until we get exactly the quantity of effect we desire, no more and no less. Then we stop, our object having been effected. An overdose or an under-dose is equally impossible, with such a method.

Jucunde.—The unpleasantness of ordinary remedies lies in the dirt and not in the medicine. Take a teaspoonful of any ordinary medicine, and you will probably find 1-10 of 1 percent of medicine; the rest is composed of the useless parts of the plant, with various other substances added in the endeavor to modify the disagreeable taste and render it more acceptable to the stomach. Why not leave out all the dirt at once and give the

clean medicine? The dose is thus reduced to a tiny granule which any child will take readily. Although most alkaloids are bitter, yet the bitterness is so slight that it is one of the rarest things for a patient to object to it. Still rarer is it for any stomach to refuse to tolerate it. The fact that in five minutes they are mainly absorbed and out of the stomach, gives us a reasonable certainty that we are going to get the effects of the remedy. A dose that lies four to five hours in the stomach, and then may be vomited, is not likely to be of much use to the patient.

Of course this is an old story to those of you who have used these remedies. Those who have not, will never realize the truth of what I have been saying until they try for themselves. When they do, they will find that I have not exaggerated in the slightest degree, but that I could have said much, very much more, in favor of these remedies and the methods based upon them, than I have attempted to give here.

DRUGS WHICH BENEFIT GYNECOLOGICAL PATIENTS

In *The New York Medical Journal* H. J. Boldt has the courage to present a paper that not only advocates some drugs but even includes among the list several that are proprietary.

How did he ever induce Foster to publish that paper?

Dr. Boldt makes the suggestion that it is unethical to prescribe patent medicines and proprietaries advertised to the public at large. He finds trade-names, as a rule, much more convenient than the chemical names of the same articles, and objects to the task thrown upon us of substituting for antipyrin, for instance, such a name as phenyldimethylpyrazolon.

He favors calcium phosphate in pelvic disorders accompanied by extremely nervous conditions, with excessive excretion of phosphates, the nervous symptoms being benefited by small doses of calcium glycerophosphate. Large doses interfere with digestion. In neurasthenia with torpidity of the intestines and anemia, with anorexia, he uses this salt with hemogallol, strychnine, arsenic and quinine. Apiol he has found a very satisfactory emmenagog, useful also in dysmenorrhea with scanty flow, in patients otherwise robust. For severe dysmenorrhea without any definite local lesions, in rheumatic or gouty women he suggests novaspirin and caffeine.

Arsenic, according to Stockman, increases the formation of leukoblastic cells in the bone-marrow, stimulating the formation of white cells, without marked change in the number of red cells. Boldt finds that it acts as a tonic to the brain and nervous system, temporarily stimulating heart action. It is more serviceable than other drugs in anemic or chlorotic amenorrhea, stimulating nutrition and checking retrograde metamorphosis. Women who feel physically unequal to the exertion of household duties have been able to perform these without fatigue after taking arsenic. It often cures irritative dyspepsia, sometimes associated with pelvic disorders; relieves the furred tongue with red and prominent papillæ, distress after eating, gastralgia, intestinal pain and loss of appetite; increases gastrointestinal secretion and augments peristalsis.

Neurasthenic women who pass mucous shreds with their bowel evacuations, especially if much emaciated, are sometimes benefited by arsenic when all other remedies fail. Many such patients have uterine displacement, when benefit is obtained from mechanical treatment combined with iron.

Hydrastis, gossypium, ergot and aletris have an important place in gynecology. They are especially applicable in chronic metritis, the uterus somewhat large, not sensitive, menstruation too free. Scanty menstruation with intense ovarian dysmenorrhea, without probable pelvic lesion, is sometimes relieved by chloride of gold and sodium, cannabis indica and gentian.

Strychnine can usually be detected in the urine half an hour after its administration. Sometimes days elapse before the urine fails to give the reaction, nevertheless it does not accumulate.

Painful menstruation—pains sharp, lancinating and tearing, but not accompanied by

backache or bearing down—is sometimes entirely cured by strychnine given continuously for four months.

For hemorrhage expected at or after confinement, strychnine may be given with advantage a week or two before the expected labor.

Irritability of the bladder, with pelvic lesions and painful micturition, in many instances yield to the homeopathic mother tincture of bryonia, five or six-drop doses at intervals of six hours.

Patients with pale, flabby, broad and tooth-indented tongue, are most benefited by astringent iron preparations in large doses. When reduced iron cannot be tolerated the carbonate may be employed. Large doses are more effective in anemia and chlorosis than small doses. Iron does not benefit a patient if it does not improve the appetite and promote digestion. Sometimes, when official preparations are not tolerated, hemogallol will act satisfactorily.

He speaks favorably of bromural as compared with the official bromides, inducing physiologic sleep in patients not too robust physically for a mild nerve sedative. Of even greater importance is its action on nervous women, with nervous symptoms at the time of the menopause. If a stronger hypnotic is necessary, veronal or trional may be tried.

His conclusions are as follows:

"In my opinion a physician who is guilty of giving a contribution for publication without having had sufficient experience with a therapeutic agent to justify an opinion is an undesirable member of the profession; and the same applies to those physicians who write articles on proprietary remedies for remuneration, a practice which, to my personal knowledge, is prevalent."

THE TEMERITY OF IGNORANCE*

The more deeply versed a physician becomes in the knowledge of his own profession, the greater is the amazement with which he notes the willingness of persons without even a smattering of medical knowledge to give advice to the sick and afflicted.

We devote our lives to the study of the human being, the physiologic functions of the body in the conditions of health and of disease. The knowledge of the first is absolutely necessary that we may recognize the departure from health that constitutes disease. We must know the history of disease also, in order that we may be able to estimate the probability of one disease rather than another affecting a person. We must study the causes as well. Studying man in health and in disease for our whole lifetime, with all the aids which science can bring to our help, we yet have to confess that frequently the mystery is beyond our reach.

Besides this, an enormous fund of knowledge is open to the physician as to the action of remedies and their application to the various disease-conditions which present themselves.

The doctor is supposed to be as intellectual a person as the community contains; at least he is up to the average. One would think, then, that since he devotes his entire life to the acquisition of knowledge on these topics, he would be looked up to as necessarily the authority, and the only authority, on these points.

It is difficult to find in any community a man, woman or child who is not ready on the spur of the moment, out of the supreme depths of their ignorance, to volunteer advice as to what a sick person should do, what medicine he should take, and even to press upon the doctor himself his suggestions. The persons who do this are yet ready on the moment to appreciate the absurdity of others presuming to advise *them* on their particular line of work.

The other day, while the new home was being finished, I tried to expedite matters by inserting a few hooks on which to hang kitchen implements. One of the workmen passing by, I jocularly remarked that I was not a member of the Union. He smiled disdainfully and said it was unnecessary to say that, since he could tell it by the way I handled the tools!

*This editorial is republished in pamphlet form and can be had on application for distribution among patients.

Whose fault is it? Is it ours, that we fail to impress upon our neighbors a sense of our own peculiar skill, knowledge and fitness for our work? To a certain extent this is true, but I am inclined to credit the universal tendency of mankind, still more of womankind, to interfere and proffer advice, simply to the common impulse of humanity, which cannot endure to see a fellow creature suffer without wanting to "do something" to give relief. This perfectly natural and praiseworthy impulse is at the bottom of the evil to which we refer. It is not any belittling of the medical profession nor any desire to undervalue our own proficiency; in fact, the individual doesn't wish to "give advice to the doctor"—it is simply that he or she wants to give relief when relief is needed. Bless their hearts! What is there in this to hurt us?

But we fail in our duty if we do not explain to them the peril which comes from such ignorant suggestions. This is all well enough if there is no better to be had, for an amateur can in any case manage to do something if a professional is not at hand; and while it may not be as well done as the professional would do it, it may nevertheless be better than nothing.

Just now an enormous number of individuals are rapidly drifting from the early, curable stages of disease into those later stages when material lesions have been established, and it is too late to cure. In the not far distant future we are going to have many a man failing and dying from disease of the kidneys, the liver, the lungs. Many a man and woman will fall dead suddenly from unsuspected heart disease, and all because they have been encouraged in the delusion that "there is nothing the matter" with them. Many a warning is now going unheeded, because the patient feels that it is the correct thing to ignore it, and that by saying, "there is nothing the matter," the remark will make itself true. Surely we have no fault to find with the people who desire to entrust themselves in the hands of a higher power than any on earth. We reverently bare our heads to the pious thought.

But why? *why?* WHY, d'd the Creator place medicines in plants if He did not intend them to be used? Why did he put the power of reason in our heads if he did not intend us to use it, to study ourselves, our diseases, and the nature and application of remedies?

Why should this idea of ignoring disease and condemning all rational efforts toward its relief be limited to medicine alone?

Why not extend it to other branches?

Why employ lawyers?

Just "think" that the wrong will be righted, and let the wrongdoer go free to follow his own sweet will.

Why employ ministers to show us the way to heaven? or school-teachers to instruct us?

Why do anything, in fact?

Is the idea not that of the African or Australian savage, who doen't try to do anything to better himself, but eats when he is hungry and sleeps when he is tired, and lets the morrow take care of itself?

The simple, commonsense view seems to be that since we have in the medical profession a set of men who devote themselves exclusively to the study of the human body and its diseases, and the means of restoring the sick to health, this work should be left exclusively to these gentlemen, even as we leave to the carpenter, the brick-maker, the plasterer, and other members of the community, the exclusive exercise of the functions to which they exclusively devote themselves. But then, isn't common sense the most uncommon of things human?

One moment of action may offset weeks of indecision. A life of intelligent action writes its autobiography in stone.

WORK FOR YOUR COMMUNITY

Dr. Geo. B. Lake, of Wolcottville, Ind., is devoting himself to one of the most important and praiseworthy objects within the reach of the physician outside of the large city; and that is, to improving the hygiene of the community. It is well known to anybody who has lived in small towns or visited them that the most absolute neglect prevails, as a rule, in the disposal of sewage and of garbage. Cyrus Edson said some years ago that there wasn't a well

or spring in the United States whose water was fit to drink; and he was not very far from the truth.

The writer once visited a very valuable lithia spring, situated in a small country town. When the proprietors took me to see the spring, we found a cow standing comfortably in the middle of it!

The mortality in small towns is usually far greater than it is in a large city, although the number of inhabitants being so few it does not attract attention. Many a city visitor has brought back typhoid fever after a sojourn in one of these "health-giving" resorts.

What a splendid opportunity there is for the local physician in every community to teach the value of hygiene and sanitation, to secure the enforcement of existing laws and the enactment of local regulations which will make the community a model one from the standpoint of health. While work of this kind may not fill the doctor's pocket, it will pay in the long run through the increase of honor and respect which will come back finally to his door.

CARCINOMA OF THE UTERUS

In *The Journal of the Michigan State Medical Society* Dr. Carstens makes a strong plea for earlier diagnosis of cancer of the uterus. He suggests a circular something like this:

"To the Women of the Land: What they should know about the early recognition of cancer.

"The change of life, or menopause, comes on gradually, rarely suddenly. It is not preceded by excessive flowing or discharge or pain in a healthy woman.

"By cancer period is understood those years after forty, although rarely it may occur earlier. The first symptoms of cancer are:

"1. Profuse flowing, even if only a day more than usual. Flowing or spotting during the interval or after the use of a syringe or the movement of the bowels.

"2. Whites, or leucorrhea, if not existing previously. If existing, but getting more profuse, watery, irritating, or producing itching, it is a very suspicious symptom.

"3. Loss of weight, if no other cause is apparent. Pain in the region of the womb, back or side.

"If any of the above symptoms occur after the age of thirty-five or forty, a woman should seek prompt relief and insist on thorough investigation of the cause and prompt treatment.

"Cancer is always at first a local disease and can be removed, if early recognized, and an absolutely permanent cure brought about."

Though today may not fulfil
All thy hopes, have patience still;
For perchance tomorrow's sun
Sees thy happier days begun.
As God willeth, march the hours,
Bringing joy at last in showers,
And whate'er we ask is ours.
—Gerhardt.

"FAGOPYRISMUS"—BUCKWHEAT ITCH

Most of us, all who have had the privilege of being born in the country, have heard the "buckwheat itch" mentioned as a very common affair; yet a writer in *The Archives of Internal Medicine* tells us there is not a case on record, and proceeds to fill the void. Assuredly so vulgar a term as buckwheat itch would not suit Doctor Henry Lee Smith, resident in the shadow of Johns Hopkins, so that a more sonorous appellation is affixed, and the malady is denominated "fagopyrismus."

Although they were probably unaware of their distinction, certain white or white-spotted animals have been enjoying the luxury of this rare affection, especially sheep and hogs; occasionally cattle and goats, rarely horses. "Milder forms are associated with an itching erythema, mainly on the head and face, constipation and digestive disturbance, the more serious being attended by cutaneous, respiratory, febrile or urinary phenomena. Pathologically there may be a vesicular, pustular, phlegmonous or even gangrenous dermatitis, and inflammatory changes in the mucous membranes, the brain, nerves and lungs."

Black or blackened animals or parts are not affected, which may be one of the compensations of our colored brother. The disease is worse in animals eating the plant in bloom, but it may follow eating the grain, bran, chaff, straw or stubble. Animals are the more affected as they are exposed to the sun. Dammann attributes the malady to fungi or their toxins; Schindelka to toxins generating in buckwheat from bacterial operations or perhaps under telluric influences, and absorbed from the intestines, these being activated by the sun's rays in parts unprotected by pigment.

Attention is called to Hausmann's experiments, in which he found that hemolysis occurred when either chlorophyl or bile is added to red blood-cells and light admitted, but not when light is excluded. Hematoporphyrin acts more powerfully than bile itself, and there is a relationship between this and chlorophyl.

The case recorded by Smith is that of a blond man who had, at the age of nine, exhibited a strong idiosyncrasy against buckwheat cakes. Violent symptoms developed the moment the slightest trace of this food touched his throat, and continued until all had been ejected. After swallowing a bit, he describes the effects as follows:

"My face, eyes, tongue, neck, shoulders and hands were hot, inflamed and swollen, my lips thick with hives. The itching about my neck, shoulders and chest was unbearable; my lungs felt as if they had so tightened up that I could hardly get my breath; I coughed incessantly; the saliva dripped from my mouth and I rolled about on the doctor's floor in agony. Almost immediately after the operation of the emetic I began to shake like one in an ague fit—the reaction I suppose. Recovery was so rapid that I made social calls that afternoon. For several days after the worst attacks the skin of my hands, scalp and face sheds in little pieces."

Similar attacks followed the eating of other cakes baked on a griddle that had been used for buckwheat, pepper adulterated with buckwheat hulls, honey from the blossoms of this plant, and sneezing ensues when this man comes in a room where buckwheat is kept. All nuts except almonds and Brazils affect him in a similar manner, but much less severely.

To test his susceptibility his arm was scarified and he was "vaccinated" with a sterilized infusion of this grain. Within a quarter hour he began to complain of tightness in the chest and nausea, with frequent coughing, rapid breathing, asthmatic breath sounds, rapid and intermittent pulse, suffused conjunctivæ, erythema on the face, neck, forearm, hand, chest and back, less on the buttocks, abdomen and legs, intense pruritus, slight swelling of the features, hands and fingers, giddiness, restlessness and unsteadiness of gait, pupils normal, no thirst. One of the two scarifications was surrounded by an urticarial wheal. The heart action became so affected that the spot was cleansed with alcohol, and in 90 minutes the patient had recovered so that he could leave the office. By the afternoon the symptoms had almost vanished.

Subsequent experiments seemed to indicate a considerable element of autosuggestion in this subject; which, however, is not inconsistent with a true idiosyncrasy.

I wonder how many of the readers of CLINICAL MEDICINE have seen cases of this idiosyncrasy.

"The human will, that force unseen,
The offspring of a deathless Soul,
Can hew a way to any goal,
Though walls of granite intervene."

"THE POINT OF VIEW"

In *The Medical Record*, Beverley Robinson contributes an interesting article on this topic. Every man is somewhat influenced by the spirit of the age, surroundings, the atmosphere in which he lives and moves, education, and despite everything, by his own personal idiosyncracy. Those who are imbued with French ideas believe in them perhaps overmuch and see a diathesis in almost every patient. On the other hand, those whose early training was in Germany localize agencies overmuch, and adopt local treatment to the exclusion at times of general remedies.

Physicians admit great advances in surgical technic, but they feel and believe they know that operations do not invariably lead to apparent good results. They see recurrences, unexpected deaths, painful symptoms, fairly attributable to operation. They believe that by careful, painstaking diagnosis, insistence on correct living, well-considered medication, many operations may be avoided.

Physical methods of research are surely very valuable, but do they teach the vital functions? Do they explain frequently why and how we have disordered functions? Do they enable us in the majority of instances by themselves to meet the indications of successful treatment? The newer laboratory methods, do they always ring true when it is a question of how to medicate or treat the patient?

A few years ago rapidly increasing leukocytosis with acute abdominal pain would seem to indicate appendicitis and operation; now these symptoms may be shown to be due to fibrinous pneumonia.

Test-meals do not seem to bring out rationally the best that may be known as to the stomachal fluids and the powers of digestion. Good cooking, foods properly prepared and served will not infrequently settle the question satisfactorily to the experienced old-time practician, when all the refined later wisdom of the laboratory helps us very little, if at all.

These facts are not intended to invalidate laboratory work, but they do strengthen the conviction that the laboratory must be subservient, as a rule, to older and more reliable clinical methods.

Very few men of judgment and experience believe that pulmonary or other forms of tuberculosis are solely cured by any kind of medicinal treatment; yet some of us do firmly believe that many die without proper medicinal treatment who would and could be saved if they had it at the proper time and in the right way. We shall never limit the immense evils of alcoholism until we greatly diminish the custom of treating.

We have learned from homeopathy some truths despite its great errors. One is, to try to relieve symptoms of disease by careful and intelligent treatment. Man is not a mosaic, composed and stuck together of small independent parts but not correlated vitally. He is not merely an organic mass of blood and tissues of which the final word comes from chemistry, pathology, physiology or bacteriology, solely; but he is a moving, living, vital personality.

When the patient is passed to the specialist by the general practician, the latter should then become the consultant. The practical physician may not be a very learned pathologist, an erudite physiologist, a skilful chemist, or an expert bacteriologist, but he must command them all; and it is he who must finally, through the cooperation of all the sciences which they represent, perfect the most beneficent of all arts; it is he who in his high mission as the servant of humanity must attain that wisdom which results from combining knowledge with the instinct and the skill for its useful application.

THE TREATMENT OF JAUNDICE

The presence of jaundice indicates obstructive disease of the biliary passages. This may be continuous and permanent, as in case of cancer or tumors pressing upon these passages. If the obstruction is permanent, coma is likely to supervene. If some of the smaller ducts alone are obstructed, and the greater part of the bile finds its way into the intestines, we may have continuous jaundice without coma or acholic stools.

In general these cases are best treated by keeping the bowels completely emptied, correcting any abnormal conditions of the duodenum, such as generally demand the use of copper arsenite, and subduing infective disease of the biliary passages by the use of sodium succinate. A good combination would be one of sodium succinate, copper arsenite and juglandin, to be given before each meal and on going to bed.

The itching of jaundice is relieved by a hypodermic dose of pilocarpine, enough to induce slight sweating. The only cases in which I have found that this relief was only

temporary and not complete, were those dependent on cancer of the liver; and I have learned to look upon the failure of pilocarpine here as presumptive evidence of the presence of this malady. Pilocarpine aids in the removal of the jaundice tint from the skin, when the obstruction has been removed, thus relieving the patient from the disfigurement more quickly than would occur without the use of this medicament.

A study of the stools would indicate whether bile was entirely absent and show when it reappeared in the stools. A study of the urine for a trace of bile would show whether there was still some obstruction remaining. The succinate should be employed as long as a trace exists, and for some time longer.

Coma from jaundice is usually an indication for immediate surgical intervention, as it is imperative that the obstruction should be relieved at once. Possibly the hemorrhage which is so liable to occur from such an operation may be prevented or relieved by atropine, all other remedies having failed up to the present time.

Cold enemas have been found effective in inducing contraction of the biliary duct and the restoration of bile to the stools. Boldine has an undoubted effect in these biliary conditions, but it is my practice to limit its use to cases where the supply of urea by the liver is deficient. It has proved valuable, however, in continued cases of jaundice from the abuse of alcohol and other stimulants, and from residence in hot climates. Between this remedy, chionanthin, dioscorein and sodium succinate, there is room for an extended clinical study, with the view of fixing the conditions for which each is especially applicable. Here again we have to call upon the practising physician for aid. The laboratory cannot help us; it is a matter for clinical observation exclusively.

PODOPHYLLIN IN LARGE DOSES

In *The Canadian Practitioner and Review*, our old friend, Dr. Robert Gray, gives some interesting account of cases in which very large doses of podophyllin were taken with good effect. In one instance, to a ranchman with double pneumonia, apparently hopeless, 10 grains of podophyllin was given at once. "In two or three hours he began to vomit copiously and purge in a stream, until the next day, when there remained nothing in him but a ravenous hunger, the fever and cough being entirely at an end." Subsequent experiment showed that 4 grains were an ample maximum adult dose, preferably taken a half-grain every hour.

In three accident cases 18 and 20 grains were given, with nothing serious eventuating; while in the tropical fevers, 5 grains at bedtime seldom failed to give relief.

Dr. Gray recommends podophyllin, gr. 1-2; extract of nux vomica, gr. 1-16; extract of hyoscyamus, gr. 1-8; and looks on the combination as "a medical magic." Podophyllin alone is applied successfully for tapeworm when malefern and pomegranate have failed. Maximum doses equal, in every respect, the action of calomel and castor oil in heroic dosage, with no sequent physical detriment. Small fractional doses he finds the best hepatic remedy and unapproached in anemias and other morbid derangements.

The will to do springs from the knowledge that we can do. Doubt and fear are the great enemies of knowledge, and he who encourages them, who does not slay them, thwarts himself at every step.—James Allen.

ATROPINE IN HEMORRHAGE

We are rich in hemostatics—iron, ergot, turpentine, hydrastinine, cannabis, the many forms of tannic and gallic acids, lead, hamamelis, erigeron, in addition to the mineral astringents of copper, zinc, *et id omne genus*.

Forget them.

Our researches have shown that atropine in full dose, enough to flush the skin, is effective in every form of hemorrhage to which man is liable except that due to the erosion of a large artery. What effect could anybody possible expect from any hemostatic in the latter case? Only a ligature, or such reduction of vascular pressure as would bring the patient into the shadows could affect such a hemorrhage.

But how can atropine act as a hemostatic? Every man who looks at the matter from the standpoint of its physiologic action insists that atropine must increase the bleeding. The stumbling block is its asserted power of increasing vascular tension. But Sollmann, in the last edition of his "Pharmacology", states that this tension increase is never more than slight and evanescent, with small doses alone, and quickly is followed by marked and continuous fall of tension.

At first I attributed the hemostatic effect to the action of atropine in directing the blood to the capillaries, where it is held, by a relaxation of their tension. But just here I commenced to receive reports showing the efficacy of this alkaloid in cases of capillary bleeding!

I am driven to this hypothesis: The capacity of the capillary system is about 700 times that of the arteries. Atropine does not relax the tension of the capillaries by sedation of the vasoconstrictors, but by actively stimulating the vasodilators. This establishes a sort of suction, a stimulation of capillary attraction, by which the blood is actively held in these vessels when opened, and prevented escaping through the cut orifices. A little more of this action might cause air to be drawn into the open vessels. It is obvious that as long as there is no break in the circuit there would be no retention or stoppage of the circulation, but the pressure in the arterial and venous systems would be reduced, and hemorrhages in them would be lessened.

This is strictly a full-dose effect, following doses of atropine sufficient to flush the skin.

Try it.

There is always opportunity in every man's life to better himself if he will. Then make your hay while the sun shines. Note: The sun is shining on YOUR field now.

CHOLERA INFANTUM

True cholera infantum has certainly grown rarer of late years. While this improvement is due in part to the change for the better in the preparation and preservation of food supplies, especially milk, we flatter ourselves that the propaganda we have been carrying on all these years for attention to the alimentary tract, the "clean-out-and-clean-up" idea, is at last bearing fruit. The term "cholera infantum" should be limited to those cases of the summer complaint of children which display choleraic symptoms: profuse vomiting and alvine discharges of rice-water-like material; the patient rapidly shriveling; the temperature subnormal, but generally with distinct heat over the stomach.

The treatment of these cases is simple, direct and powerfully effective. The symptoms may be referred to hyperirritation of the pneumogastric nerve, and for this condition atropine is the physiologic remedy. Give the child in its second summer a hypodermic injection of from 1-1500 grain of atropine up, best beginning with a small dose and repeating if necessary. This should be continued until distinct evidences of atropine action are present, such as dilation of the pupil or flushing of the skin. By this time the gastrointestinal irritation will be allayed, and we may commence with the sulphocarbolate of zinc. Of this give from 1-6 to 1 grain every half hour and continue it until the alimentary tract is completely disinfected and the cholera has subsided.

The best food for the child in this condition is the raw white of egg, dissolved in cold water, of which an abundance may be given. Stop milk absolutely. Give nothing but the white of egg and continue for a week. If the symptoms persist then, despite treatment, change the diet to barley water, or rice water, or toast water, giving absolutely nothing else for another week. At the end of this time if the symptoms persist, change to fresh, fruit juice.

Hypodermic injections of normal saline solution may be required to keep up the bulk of the blood, which is rapidly depleted by the excessive discharges. Dysenteric symptoms may be met by enemas of water as hot as can be borne. If the sulphocarbolate of zinc is not retained on the stomach well, it may be administered in powders with a little lactopepsin and subnitrate of

bismuth, or the sulphocarbolate of soda may be subsituted.

Excellent results have been reported from the use of copper arsenite, in doses of 1-1000 of a grain repeated every half hour; and this is especially a good remedy when the malady persists to some degree after the severe symptoms have subsided. Cholera infantum is usually prevented by careful attention and antiseptic treatment of the preliminary diarrhea. Every diarrhea of a child under two years of age, occurring in the city during the heated term, should be attended to at once, and when this is done the severer forms of the malady such as that under consideration will rarely occur.

Don't believe that these methods are effective?

Try them!

TREATMENT OF TUBERCULOSIS

In *American Medicine* for March Beverely Robinson presents some practical suggestions on the treatment of laryngeal and pulmonary tuberculosis. His suggestions are so wise, and also so badly needed at the present time, that we reproduce the substance of them here.

"One would almost be led to believe, unless much and long experience had proven the contrary, that mere healthful hygiene and surroundings would ultimately effect a cure in any instances susceptible of it, and especially whenever these conditions are instituted from the inception of the disease, so far indeed as any visible or rational evidences would indicate. This I am confident is wrong and unwise. Local and general medication is desirable and in many instances essential to promote or effect a cure. Even in instances where a cure is not accomplished the disease is frequently arrested for months and years and, if properly followed, never gets beyond the initial stage, or the stage more advanced, when medical treatment was first instituted.

"In looking back over my notes, during many long years, this conviction is simply strengthened very much, if it were possible. One great difficulty with modern medicine is the tendency to forget, ignore or never to be familiar with the work and observations of the physicians who have gone before. It is proven to my mind that in skilled hands a laryngeal examination will often fix a diagnosis of laryngeal or pulmonary tuberculosis, when nothing else will. It is certain that proper local and general medication will often prevent the development of pulmonary tuberculosis. It is also certain that without proper local medication of the larynx no general medication will always avail, admitting best hygienic conditions and surroundings, and save the lives of a certain proportion of patients thus threatened imminently or already affected."

Dr. Robinson recognizes the tendency on the part of too many physicians to accept the last new idea and totally to forget everything that they have learned previously. If new ideas so completely upset the knowledge and experience of previous years, they should be received with suspicion. There is nothing in climate, there is nothing in open air which will supersede the necessity to the tuberculous of daily minute inspection and skilful treatment of the conditions presented; and the more generally the truths enunciated by Dr. Robinson are comprehended, the better for patient and physician.

Are you a "fan"—a real baseball fan? No? Get into the game! It's the epitome of life—the lust of conquest—the epic of manhood. Come to Chicago—and see the Cubs beat Pittsburg—sometime(?)—and you'll understand. Then come to Ravenswood.

THE HYPODERMATIC EXHIBITION OF LOBELIA

Since Jentzsch recounted his experience with specific lobelia, exhibited hypodermatically in diphtheria cases, much interest in this treatment has been manifested. Membranous croup, Jentzsch claims, also yields rapidly and almost universally to injections of lobelia. His paper, read at the last annual meeting of The National Eclectic Medical Association, was reproduced in THE AMERICAN JOURNAL OF CLINICAL MEDICINE for July, 1908, and since that time scattering reports from the field have been

received and carefully studied. However, the results obtained vary so widely that the value of the method must at present remain problematical.

We are ardent admirers of lobelia and recognize its marked therapeutic value, but we much prefer to give it internally or per the urethra or rectum. Lobeline, the alkaloid of lobelia inflata, as at present obtained is an unsatisfactory product; lobelin, a concentration, proving more satisfactory.

Solutions of lobelin injected into the urethra speedily relieve tenesmus and so modify most strictures as to permit the passage of a sound or bougie which earlier could not possibly traverse the canal. The constitutional effect of lobelia, moreover, can readily be obtained from the injection of a solution of lobelin into the rectum—indeed experience leads us to prefer this route in most instances.

Unfortunately hypodermatic injections of lobelia are often quite painful, even lobelin solutions possessing this disadvantage. The ordinary tinctures of lobelia when injected set up intense irritation, and Lloyd's specific lobelia usually does the same thing. One correspondent following Jentzsch's advice injected specific lobelia and had as a result a highly inflamed leg, intense pain and a localized abscess. Another "injected lobelia once," and his experience was such that he declines to repeat the procedure. On the other hand, a third correspondent reports beautiful results from Jentzsch's method in a case of diphtheria, and still another writer in a recent article records promptly curative results in a severe case of croup from the use of lobelia (hypodermatically) and calx iodata internally.

Evidently this subject requires study, and we would ask CLINIC readers to report their experiences, noting particularly what of a therapeutic character not obtainable from its internal use follow the injection of lobelia; the amount of pain and inflammation caused by such injections should be stated, also the particular preparation of lobelia used.

If lobelia is of such sovereign value in croup and diphtheria as Jentzsch and other reporters claim, the everyday doctor wants to use it, and if the tinctures, oils and concentrations now on the market prove unsuitable for hypodermatic use, thus limiting the field of the drug's usefulness, we must get to work and produce a nonirritating preparation of lobelia inflata.

IPECAC IN DYSENTERY

The New York Medical Record says that Dock, at the late meeting of the American Society of Tropical Medicine, urged the more frequent use of ipecac, its neglect being in direct opposition to the strong recommendations made by experienced physicians in India, the United States and Manila. Vomiting was hardly ever produced, even with doses of 60 or 80 grains a day. The clinical result was most striking, the amebas disappeared quickly as a rule. Subjective discomfort was often surprisingly slight.

Stitt said that in the Philippines most excellent results were obtained by the use of ipecac. He had had an amebic infection for two or three years and the only thing that would do him any good was ipecac. After using it three or four days, he would lose his appetite and be forced to discontinue the drug.

Anders had found its cures only temporary.

Ashburn said that he had never seen any patients who did not recover promptly under ipecac treatment, save one, if they could retain the drug. If he did not cure it within a month he felt doubtful of ever curing it.

Dock said that he considered ipecac more effective in acute cases than any other drug, and had had better results from it in cases of long standing.

I have relied on ipecacuanha for thirty or more years as my main stay in treating dysenteries. The British physicians in India developed this treatment, and learned that emesis prevented the benefit. They used an ipecac "de-emetized," but opinions varied as to its value. We know now that emetine is the most valuable curative element and that the irritant alkaloid cephaeline causes the vomiting. By using chemically pure emetine we secure the benefits of this

priceless medicament without its disadvantages. Most patients retain 1-12 grain of the pure alkaloid without any nausea, if given in capsule or cachet with a little bismuth subnitrate and lactopeptine or some other mild pepsin powder. This dose may be repeated every two hours until ipecacuanha stools—spinach-green—replace the dysenteric discharges. Hot enemas of quinine solution, with zinc sulphocarbolate by the mouth, render the alimentary canal of that patient unpopular as a residence location for Shiga's bacilli.

WHERE TO PUBLISH?

When a real live man takes the trouble to write a real live article, he wants it published where as many real live readers can get at it as possible. This is why many of our best men fight shy of medical societies. They go to the trouble of getting up a really good article; it is heard by less than a hundred men, sometimes by only half a dozen; it is then published in a state medica society journal, which goes only to its own state; or in the organ of its society, which goes to a very few except the members.

The article goes into a volume of annual transactions, and who ever heard of any man reading a volume of transactions! A snapshot of such a reader would command its price in the museums, if it could be obtained.

A wise man writes his article for a certain audience. He calculates his audience in preparing his paper. Then he wants to reach that audience. If it is a general one, if he wishes to reach the active practicians all over the country, he will take an independent journal of wide and general circulation. If he is writing of matters which only concern the physicians of the state in which he lives, he may have his article published in a journal of that state.

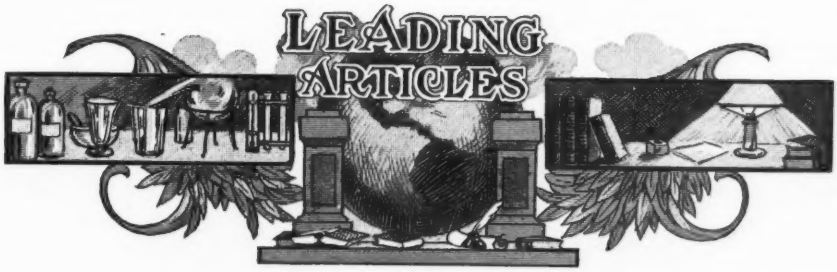
This matter came forcibly to our mind recently while perusing the Transaction of the American Proctologic Society, published in *The Proctologist.* The matter was of unusual interest, even to a man who does not make that his specialty. But the society before which these papers were delivered numbers thirty-one people. The number of men who are engaged in that specialty may be estimated from the number in the society. It certainly can not be very large. Had these papers been published in an independent medical journal, whose subscribers were scattered over the entire United States, the valuable information conveyed by the paper would have been diffused widely and great benefit would have resulted. As it is, one must confess to a feeling of regret that such excellent material is entombed where by no possibility can the general profession get at it.

The men who succeed are those who seize upon hundred-handed Opportunity, which others see, but seeing, know not and let pass.

APPLIED PHYSIOLOGY

Under this title Dr. Thomas G. Atkinson is publishing a series of papers in *The Medical Standard* which one really ought not to miss. We, who advocate the use of definite therapeutic agents, are continually urging upon our readers the importance of studying physiology in its modern aspect, as well as pathology, in order that deviations from the normal standard shall be accurately noted and the physician be enabled to apply his therapeutics with similar accuracy. Dr. Atkinson is giving the fundamental facts of physiology in a way to be quickly comprehended and easily remembered. He is taking up especially those points which are of the greatest importance to the practician.

After studying Dr. Atkinson's latest paper, in the April number of *The Standard*, we really regret that CLINICAL MEDICINE had not the publication of this series. However, readers of CLINICAL MEDICINE are never narrow, nor do they limit themselves to this journal alone. Every reader not already a subscriber for *The Medical Standard* should send for a sample copy of that number. *The Standard* is published by G. P. Engelhard & Co., 353–357 Dearborn St., Chicago, at $1.25 a year.



Limitations of the Emmanuel Movement

A description of some of the methods of mentally impressing and "curing" the sick which have been practised in the past, compared with the most modern phase of psychologic therapeutics

By JAMES G. KIERNAN, M. D., Chicago, Illinois

III.

STRESS has been laid on the connection of alleged psychologists with the Emmanuel Movement, as evidence of its difference from Eddyism. "The psychology of the Emmanuel movement," remarks *The Psychologic Clinic*,* "is not the psychology of Wundt, nor indeed of any psychological laboratory. It is the psychology of Hudson, Bramwell and Myers. If is from Hudson that Dr. Worcester gets his notion of the subconscious mind, which he commends as an explanation of double personality. It is from Bramwell that he takes over, among other absurdities, the opinion that in the hypnotic state a subject cannot be induced to commit an act which is contrary to his moral sense. It is from Myers, who has given expression to an ancient theory under the modern concept of subconsciousness, that he derives his belief in a hypnotism which brings us in direct contact with a larger, purer and nobler consciousness.

Suggestion—Psychology Not New but Old

"As a matter of fact the psychology which underlies Hudson's, Myers' and Worcester's thought is as old as human thought itself. It appears variously as fetichism, neoplatonism, animism, psychism, anthropomorphism, occultism, mysticism. This type of psychology, moreover, has always manifested a special interest in mental healing." . . . .

"While the psychology of 'Religion and Medicine' is the psychology of Myers, Hudson and Bramwell, the driving force which has brought conviction to Worcester and his associates is Professor William James. 'This distinguished writer,' says Dr. Worcester, goes on to show how levels of new energy which have remained unutilized may be tapped by the will set to work by various suggestive methods. Thus modern psychology puts its imprimature on a very ancient doctrine. Without questioning for the present the propriety of identifying in this manner Professor James and modern psychology, the question arises whether Dr. Worcester is justified in thus bringing to his support such a 'distinguished authority.'"

That James has not been misrepresented, clearly appears from his appraisement of Myers' contributions to psychology. James considers Myers' investigations and his theory of the subliminal consciousness a contribution of great value. He says: "Looking back from Frederic Myers' vision of vastness in the field of psychological research upon the program as most academic psychologists frame it, one must confess that

*February, 1909.

its limitation at their hands seems not only unplausible but in truth a little ridicuous."

He adds: "Myers' conception of the extensiveness of the Subliminal Self quite overturns the classic notion of what the human mind consists in." "The outlying Subliminal represents according to him more fully our central and abiding being." And, again, he says: "In one shape or another the Subliminal has come to stay with us." Although Professor James accuses official science of refusing to attend to subconscious phenomena, as a matter of fact science has concerned itself with subliminal phenomena since the days of Descartes, to whom we owe the theory of automatic and reflex functions of the nervous system, which made possible the development, first of modern physiology and then of psychology.

Every few seconds the eyelid sweeps over the eyeball, removing dust and keeping moist its anterior surface. Is this the work of a beneficent consciousness or merely reflex action? Where are we to draw the line in ascribing consciousness to the lower nerve elements? For example, the heart-muscle through its nervous ganglia shows remarkable powers of spontaneous automatism, keeping up its ceaseless rhythm with but slight modifications throughout a life-time. Should we not then recognize within the heart a soul which does its duty nobly without personal interest or gratification?

Someone has said that the first cry of the newborn child is the wail of a pure soul thrust into a world of sin. Shall we permit theories of subconsciousness to revive fanciful speculations of this kind, or shall we continue to follow the development of physiological and psychological science and ascribe the cry of the child to purely mechanical processes? If we are to accept Myers' theory of subconsciousness, Descartes labored in vain, and the sciences of psychology and physiology have been erected upon an insecure foundation.

Issue Between William James and Science

In this issue, therefore, it is William James *versus* science. To uphold his side of the contention, James is compelled to attack current psychology just as Worcester is compelled to attack current medicine. Like Worcester, also, he proceeds to the attack by accusing psychology of narrowness.

"I record my bare opinion here," he says in another place, "unsupported by the evidence, not, of course, in order to convert anyone to my view, but because I am persuaded that a serious study of these trance phenomena is one of the greatest needs of psycohology, and think that my personal confession may possibly draw a reader or two into a field which the *soi-disant* 'scientist' usually refuses to explore."

And all this from an acquaintance with the trances of *one* medium, Mrs. Piper, whom Professor James calls "my own white crow," who upsets for him the general law that all crows are black, meaning all mediums are frauds.

James, whose early environment was Swedenborgian mysticism without Swedenborgian science, never lost the resultant tendency to the occult. This not only prevented him from judicial investigation of mediums, but also from seeing the morbid where an occult explanation was possible. This appears very decidedly in his "Census of the Hallucinations of the Sane." Many of the "sane" are demonstrably paranoiacs in the stages of transformation, whose judgment of their own mental state is accepted.

In his judgment of spiritualism the same lack of judicial balance appears. Slade, notoriously an impostor, caught the physicists Lodge and Crooks with his slate-writing trick, but was exposed by Ray Lankester who knew sleight of hand. A medium who caught Lombroso was detected in her sleight of hand by O. Moll. The Fox sisters* were shown by the confessions of two of them to be mixtures of hysteria and imposture, were detected by the Seibert Commission, especially endowed for the investigation of the phenomena of spiritualism by a diseased believer.

While both James and his Harvard colleague, Münsterberg, show a tendency to usurp the province of juries in criminal cases, neither possesses the necessary knowledge

*Davenport, "Spiritualism."

of psychiatry, of the fundamental principles of the law of evidence or the necessary judicial balance to determine the limits of psychology. The mental attitude of James toward science unpleasantly suggests the suspicional twist of the paranoiac whose egotism subverts all natural laws by preconceived notions.

The Morbid Foundation of Trance States

That the morbid and primitive mentality often underlies trance and allied states has been repeatedly shown by psychological historians. Epilepsy, with its hallucinatory visions, in unconscious states, hysteria, paranoia, katatonia, alcoholic and other sexual states with their religious ecstacies, underlie many "revelations" inflicted on suffering mankind. In many such states the almighty dollar, as viewed by the egotism of state socialists, is worshiped. This was the case not only with Dowieism and Mormonism but also with the Shakers and Perfectionists of Oneida.

The Shaker movement was founded by Mother Ann Lee. She was an illiterate, hysteroepileptic hydrocephalic, eighth child of a blacksmith, born in England in 1736. Her employment in a cotton factory from early girlhood, and later the exhausting cutting of fur for hatters prevented an education. As she never learned to read and write, there was probably present also that lower bourgeois contempt for letters as worldly, still evident in her followers.

Her parents in 1758 joined a sect of quakers, called from their hysteric motor explosions, "Shaking Quakers." She herself had marked epileptiform attacks, attended by religious ecstacy and visions. During these, while in jail for hysteroreligious antics (which, however, did not go so far as the nude antics of the early disciples of Fox and Penn), she saw "Christ, who satisfied all her desires."

She had a clear view of the mysteries of human iniquity, of the root and foundation of human depravity, of the "very act of transgression committed in the garden of Eden." Henceforth she bore "open testimony against lustful gratification of the flesh, and testified in open-pointed manner that the soul could not follow Christ in regeneration while living in the works of natural generation or any of the gratifications of lust."

Ann Lee from early childhood had shown repugnance to marriage, but was persuaded to marry a blacksmith, by whom she had four decrepit children, who died in infancy. She then left her husband, but went to America with him later. Here she baffled his demands for coitus until he left her for a more complacent companion. She had meanwhile become the leader of a sect which settled in Watervliet, New York. They were few in numbers until given a boom by a hysteroreligious epidemic among the Baptists attended by motor disturbances. At this time the usual hysteric miracles were performed by "Mother" Ann. She died at 49. She was a dwarfish, thick-set woman with short legs, long arms and a disproportionately large head. After the hysteroreligious epidemics of 1799-1801 the sect increased enormously in number, but ceased so to do after 1830.

The Beliefs of the Shakers

The sect holds that God is a dual (male and female) being; the distinction of sex is eternal. The angels are male and female. The Shakers, like the Eddyites, hold that disease is an offense to God and that it is in the power of man to be healthful if he will. They believe, like the rabbis, that Adam was originally a dual being. Lilith, according to the Talmud, was the female element of this hermaphrodite. United, the two quarreled; separated, she became a thorn in Adam's flesh. By her Adam begot devils. In Shaker theology Eve is a devil-begetter also. Lilith so threatened Eve's posterity that incantations were long used against her, which have sunk into cradlesongs or lullabies (Lilith abi).

Considering the ascetic celibate requirements and the enforcement of communal life and property, "Mother" Ann Lee had greater success than "Mother" Eddy, a far greater worshiper of the almighty dollar. The Shakers at first regarded disease as a sin to be criticized out by the brethren.

Later commercial success in the sale of medicinal herbs grown by them modified these views so far as the outside world was concerned. The criticism view was prominent in the Perfectionists at the Oneida community.

The Strange Greatrakes Movement

The Greatrakes* movement in the 17th century had many of the features of Eddyism and Dowieism, although Greatrakes was of a somewhat higher type than the plagiarist of Quimby's notions and the blatant apostle of Billingsgate phraseology. Valentine Greatrakes performed "severall marvaillous cures by the stroking of the hands." He was a gentleman of condition, and, at first, the dupe of his own imagination rather than a deliberate charlatan. He was born on February 14, 1628, on his father's estate of Affane, in the County of Waterford, Ireland. He was, on both sides, of more than merely respectable extraction, his father being a gentleman of good repute and property, and his mother a daughter of Sir Edward Harris, Kent, a Judge of the Irish King's Bench. His school-life was passed in the once famous Academy of Lismore.

At thirteen years of age his mother (who had become a widow), on the outbreak of the rebellion, fled with him, his brothers and sisters to England, where the fugitive family were hospitably entertained. After concluding his education in the family of a High-German minister of Stock Gabriel, Devonshire, Valentine returned to Ireland, then distracted with tumult and armed rebellion. Joining the victorious side, he obtained his father's estate. He served for six years in Cromwell's forces (from 1650 to 1656) as lieutenant of the Munster Cavalry, under command of the Earl of Orrery. Valentine's commission was in the Earl's regiment. From entering the army till the close of this career he enjoyed the patronage and friendship of the Earl's family.

When the Munster horse was disbanded in 1656, Valentine retired to Affane and occupied himself as an active and influential country gentleman. He was a frank and commanding personage, of pleasant manners, gallant bearing, fine figure and singularly handsome face. With a hearty and musical voice and high animal spirits, he was the delight of festive assembles, taking his pleasure freely, but moderately. Indeed, Valentine was a devout man, not ashamed, in his own household and in his bearing to the outer world, to avow that it was his intention to serve the Lord.

No Sectarian Bitterness About Greatrakes

But, though a Puritan, there was no taint of sectarian rancour or uncharitableness. When an anonymous writer aspersed his reputation, he responded—and no one could gainsay his words—with regard to his public career:

"I studied so to acquit myself before God and man in singleness and integrity of heart, that, to the comfort of my soul, and praise of God that directed me, I can with confidence say I never took bribe nor reward from any man, though I had many and great ones before me (when I was Register for Transplantation); nor did I ever connive at or suffer a malefactor to go unpunished, if the person were guilty of any notorious crime (when I had power), nor did I ever take the fee belonging to my office, if I found the person were injured, or in want; nor did I ever commit any one for his judgment and conscience barely, so it led him not to do anything to the disturbance of the civil peace of the nation; nor did I take anything for my fee when he was discharged—for I bless God he has taken away a persecuting spirit from me, who would persuade all men to be Protestants, those principles being most consonant to Truth and the Word of God, in my judgment, and that profession which I have ever been of, and still am. . . . Yet (though there were orders from the power that then was, to all Justices of the Peace, for transplanting all Papists that would not go to church) I never molested any one that was known or esteemed to be innocent, but suffered them to continue in the English quarters, and that without prejudice. So that I can truly say, I never injured any man for his conscience, con-

*Jeaffersen, "Book About Doctors."

ceiving that ought to be informed and not enforced."

On the Restoration, Valentine Greatrakes lost his offices and was reduced to a mere private gentleman. His estate was a small one; but he labored on it with good results, introducing into his neighborhood a more scientific system of agriculture than had previously been known there, giving an unprecedented quantity of employment to the poor.

Perhaps he missed the excitement of public business, and his energies, deprived of the vent they had for many years enjoyed, preyed upon his sensitive nature. Anyhow, he became the victim of his imagination, which, acting on a mind that had been educated in a school of spiritual earnestness and superstitious introspection, led him into a series of remarkable delusions. He first had fits of pensiveness and dejection, similar to those which tormented Cromwell ere his genius found for itself a more fit field of display than the management of a brewery and a farm.

He Is Impelled to Cure the King's Evil

Ere long he had a strange persuasion (of which he was not able to give any rational account), that there was bestowed on him the gift of curing the King's Evil. This, for the extraordinariness of it, he concealed for some time. Finally he told his wife "that he did verily believe that God had given him the blessing of curing the King's Evil; for, whether he were in private or public, sleeping or waking, still he had the same impulse; but her reply was to him, that she conceived this was a strange imagination."

Patients either afflicted with the King's Evil, or presumed to be so, were in due course brought before him. On his touching them, they recovered. A second obsession gave him the power of curing ague; and a third imparted to him command, under certain conditions, over all human diseases.

His modes of operation were various. When an afflicted person was laid before him, he usually offered up a prayer to God to help him, to make him the humble instrument of divine mercy. And invariably, when a patient derived benefit from his treatment, he exhorted him to offer up his thanks to his Heavenly Father. After the initiatory supplication the operator passed his hands over the affected part of the sick person's body, sometimes over the skin itself, and sometimes over the clothes. The manipulations varied in muscular force from delicate tickling to violent rubbing, according to the nature of the evil spirits by which the diseased people were tormented.

Greatrakes' theory of disease was the scriptural one: the morbific power was a devil, which had to be expelled from the frame in which it had taken shelter. Sometimes the demon was exorcised by a few gentle passes; occasionally it fled at the verbal command of the physician, or retreated on being gazed at through the eyes of the mortal it tormented; but frequently the victory was not gained till the healer rubbed himself (like the osteopaths who today make such large incomes) into a red face and a copious perspiration.

A Physician's Report Upon Greatrakes

Henry Stubbe, a famous physician in Stratford-upon-Avon ("Miraculous Conformist," 1666), gives the following testimony:

"Proofs that he revives the Ferment of the Blood. Mr. Bromley's brother, of Upton upon Severne, after a long quartane Ague, had by a Metastasis of the Disease such a chilnesse in the habit of the body, that no clothes could possibly warme him; he wore upon his head many spicedcaps, the tenne pounds weight of linen on his head. Mr. Greatarick stripped him, and rubbed him all over, and immediately he sweat, and was hot all over, so that the bath never heated up as did the hand of Mr. Greatarick's; this was his own expression. But Mr. Greatarick causing him to cast off all that multitude of caps and cloaths, it was supposed that if frustrated the happy effect, for he felt the recourse of his disease in some parts rendered the cure suspicious. But as often as Mr. Greatarick came and rubbed him he would be all in a flame againe for half-an-hour; the experiment whereof was frequently practised for five or six dayes at Ragly."

Greatrakes speaks of his more violent curative exertions making him very hot. Only occasionally had he to labor so vehemently. His eye, the glance of which had a fascinating effect on people of a nervous organization, and his fantastic ticklings, usually produced all the results required by his mode of treatment.

How the Fame of the Healer Spread

The fame of the healer spread far and wide. Not only from the most secluded parts of Ireland, but from civilized England, the lame and blind, the deaf, dumb, and diseased made pilgrimages to the Squire of Affane. His stable, barn and malt-house were crowded with wretches imploring his aid. The demands upon his time were so very many and great that he set apart three days in the week for the reception of patients. On those days, from six in the morning till six in the evening, he ministered to his wretched patients. He took no fee, imbued with a cheering sense that he was fulfilling the commands of the founder of his religion.

The Dean of Lismore cited him before the ecclesiastical court, to render an account of his proceedings. He went, and on being asked if he had worked any cures, replied to the court that they might come to his house and see. The judge asked if he had a license to practise from the ordinary of the diocese. He replied that he knew of no law which prohibited any man from doing what good he could to others. He was, however, commanded by the court not to lay his hands again on the sick until he had obtained the Ordinary's license to do so. He obeyed for two days then went on more earnestly than ever.

Let a charlatan or an enthusiast spread his sails, the breeze of fashion is always ready to swell them. The Earl of Orrery took his quondam lieutenant by the hand, persuaded him to go to England to cure the Viscountess Conway of a violent headache. Despite the ablest physicians of England and France she had suffered from this for many years. Lord Conway sent him an urgent invitation to come. He complied, but was unable to give relief to his hostess in a month. His inability to benefit Lady Conway did not injure his reputation. He did not profess to be able to cure everyone. An adverse influence—such as the sins or want of faith of a patient—was enough to counteract the healing power. In the jargon of modern Eddyism, practically a revival of Greatrakes's extravagance, the healer could affect only those who had faith.

Though Lady Conway was beyond the reach of his mysterious agency, the reverse was the case with others. The gentry and commonalty of Warwickshire crowded by thousands to him. He touched, prayed over, blessed and sent them away rejoicing. From Rugby he went to Worcester, at the request of the Lord Mayor and Aldermen of that city; and from Worcester to London. Lord Arlington commanded him to appear at Whitehall, for the amusement of Charles II. A man who could cure lues by a touch would have been an acquisition to such a court as then presided over English manners.

Greatrakes Becomes a Star in London

In London he immediately became a star. The fashion of the West and the wary opulence of the East laid their offerings at his feet. For a time he ruled from Soho to Wapping. Mr. Justice Godfrey gave him rooms for patients in his mansion in Lincoln's-inn-Fields. Thither flocked the mob of the indigent and the mob of the wealthy to pay him homage. Mr. Boyle (the brother of the Earl of Orrery), Sir William Amith, Dr. Denton, Dr. Fairclough, Dr. Faber, Sir Nathaniel Hobart, Sir John Godolphin, Dr. Wilkins, D. D., Dr. Whichcot, D. D., and Dr. Cudworth, D. D., were among his most vehement male supporters. The majority of his admirers were women. The Countess of Devonshire entertained him in her palace; Lady Ranelagh frequently amused the guests at her routs with Mr. Valentine Greatrakes, who, as the lion of the season, performed with wondrous results on the prettiest or most hysterical present. It was held by his intimate friends that the curative property came from him as a subtle aura, effulgent, and of an exquisitely sweet smell, which could only be the Divine breath.

"God," says Dr. Henry Stubbe, "had bestowed upon Mr. Greaterick a peculiar temperament, or composed his body of some particular ferments, the effluvia whereof, being introduced sometimes by a light, sometimes by a violent friction, should restore the temperament of the debilitated parts, reinvigorate the blood, and dissipate all heterogeneous ferments out of the bodies of the diseased by the eyes, nose, mouth, hands and feet. I place the gift of healing in the temperament or composure of his body, because I see it is necessary that he touch them. Besides, the Right Honorable the Lord Conway observed one morning, as he came into his Lordship's chamber, a smell strangely pleasant, as if it had been of sundry flowers; and demanding of his man what sweet water he had brought into the room, he answered, None; whereupon his Lordship smelled upon the hand of Mr. Greaterick, and found the fragrancy to issue thence; and examining his bosom, he found the like scent there also."

Dean Rust gave similar testimony; Sir Amos Meredith, who had been Mr. Greaterick's bed-fellow, did the like.

Amongst the certificates of cures performed which Greatrakes published, are two to which Andrew Marvell affixed his name as a spectator. One of them is as follows:

"I, Anthony Nicholson, of Cambridge, bookseller, have been affected sore with pains all over my body, for three-and-twenty years last past, have had advice and best directions of all the doctors there; have been at the bath in Somersetshire, and been at above one hundred pounds expense to procure ease, or a cure of these pains; and have found all the means I could be advised of Dr. Benjamin Whichcot and Dean Rust, I applied myself to Mr. Greatrake's for help upon Saturday was sennight, being the latter end of March, and who then stroked me; upon which I was very much worse, and enforced to keep my bed for five or six days; but then being stroked twice since, by the blessing of God upon Mr. Greatrakes' endeavors, I am perfectly eas'd of all pains, and very healthy and strong, insomuch as I intend (God willing) to return home towards Cambridge tomorrow morning, though I was so weak as to be necessitated to be brought up in men's arms, on Saturday last about 11 of the clock to Mr. Greatrakes'. Attested by me this tenth day of April, 1666. I had also an hard swelling in my left arm, whereby I was disabled from using it; which being taken out by the said Mr. Greatrakes, I am perfectly freed of all pain, and the use thereof greatly restored.

"Anthony Nicholson; in presence of Andrew Marvell, Jas. Fairclough, Tho. Alured, Tho. Pooley, W. Popple."

(*To be continued*)

The General Practician in the Realm of Psychotherapy

The secret of the success of the faith-healer, the quack and the charlatan, with some practical applications for the use of suggestion-therapy by the ethical physician

By HENRY S. MUNRO, M. D., Omaha, Nebraska

AS an introduction to the subject under consideration and showing the abuse of psychological methods by mountebanks and charlatans, the following experiences are related in the belief that they will not only be of interest to the medical profession from a psychological standpoint, but will also serve as a practical illustration of the need of a more intelligent conception of the scope and usefulness of psychotherapy

as an adjunct to the resources of the general practician, and for a better understanding of the practical methods of its employment as well.

In a town of five thousand inhabitants visited by the writer there was engaged in the practice of medicine a supposed physician who had obtained license to play the part of a physician when the state's medical-practice laws were extremely lax, he not having attended a professional college more than six weeks during the entire time of his medical training. In this town also were a number of competent physicians, graduates of the more reputable medical schools, who had also taken one or more postgraduate courses in Chicago, New York, Paris, or Berlin. Yet the untrained brother did more work than any two of the well-qualified physicians, albeit he did not know the ABC of scientific medicine.

This mountebank enjoyed the reputation of knowing exactly what his medicine would do, for "he made his own medicine," as was the common talk of the town. One of his methods was to give a dose of medicine twenty minutes after each meal and then have his patient lie down for twenty minutes —"to let his stomach take it up"—giving him the positive assurance that "you will have no indigestion with that meal, and by the time that bottle is taken up you can eat what you please and will never know that you had a stomach."

Another ruse of his was to give seven drops of medicine for seven doses, beginning to give the first dose at exactly seven minutes past seven o'clock, as a sure remedy for insomnia. "When you take the seventh dose, turn out the lights and shut your eyes, you will never know when eight o'clock comes, and you will sleep sound all night."

This fellow had pretended specifics for any and every condition, and in all cases charged a stiff price, paid in advance.

Too ignorant to be aware of his limitations, this untrained egotist had unconsciously stumbled upon a method of dealing with his patients that evoked the psychic factor, while both he as well as his patients were deluded into believing that his medicines actually accomplished the therapeutic results. And the other physicians of this neighborhood were puzzled to know what remedies he used that were proving so trustworthy.

How an Ignorant Italian Became a "Healer"

In one of our cosmopolitan cities an ignorant Italian was treating in his office on an average sixty patients per day by laying his hands on them, and he had kept this up for three years at the time that he came to my notice. Upon questioning him he stated that he had upon one occasion gone to see a "divine healer," who at once asserted, "You have too much power for me to treat you, you are a healer yourself." When he returned to his home he related his experience to his mother who at that time was suffering with a severe headache and for three years had what her physician had diagnosed as diabetes. Her headache was dispersed as soon as he put his hands upon her, and in a short period her diabetic symptoms had all been relieved. On the strength of this result with his mother, one after another of his neighbors began to call to see him for treatment, and when asked what he could do for them respectively he invariably answered, "I can only tell you what I have done for others," and with his hands placed on them he began to relate his experiences with the wonderful cures that he had made. When I attempted to explain to him that his results were obtained through the unconscious use of suggestion he could not understand how that could be possible; he did not not know anything about suggestion.

In one corner of his office was a great pile of mechanical appliances that had been discarded by his patients as the result of his treatment. He believed that his was a special "gift from God," and he could talk of nothing else, being a miserable psychoneurotic himself. His manifestations of irritability and weakness he regarded as being due to giving so much of his own strength to his patients.

A reputable physician of that city who had been impressed by the remarkable results of his work, both palliative and curative, in-

sisted that I should interview him, and it was through his interest in his work that I was enabled to obtain the facts that are herein related.

Treatments of an "Indian Herb-Doctor"

In another small town of five thousand inhabitants a reputable physician informed me that an "Indian herb-doctor," living twenty miles from there, treated acute gonorrhea by making a local application to the dorsum penis, and that he actually treated more gonorrhea-cases than the nine physicians in that town combined, with results that had been confirmed by his own observation after a careful examination with the microscope before and after his treatment to determine the presence or absence of the gonococcus. I know nothing of the practical employment of the psychic factor in the treatment of gonorrhea or of the benefit to be derived from a local external application in this infectious disease. The solution of the case here cited is left for the reader to determine. It at least shows the gullibility of the people or the fallibility of some physicians.

In another city a well-known-physician had for several years under observation a case of true epilepsy, his patient making a visit to his office from two to four times per month and had done so continuously for two years. Then four months elapsed without his patient showing up, when the mother of the afflicted came to consult him about another member of the family and informed him that the epileptic girl was entirely well and had been so for four months. Much gratified at this information the doctor began to refresh his memory in regard to the prescription that had produced such beneficial results, whereupon he was told that "the Indian doctor had cured her."

With much tact and after a long period of time he persuaded the woman to let him know the secret remedy that she had promised not to divulge, which turned out to have consisted of a tablespoonful of olive oil in a teacupful of fresh human urine, voided by another person, taken every morning before breakfast, for one month. Two years had elapsed since this physician had become acquainted with the remedy that had produced this remarkable "cure," and he had taken pains to keep the progress of the case under observation. There had been no return of the seizures since the administration of the first dose of that prescription, while prior to that the attacks had been occurring from once per day to sometimes only once or twice per week.

I have no explanation to make for this therapeutic result upon the virtue of the psychic factor in the case cited, nor do I know that the urea or the olive oil taken in the dose prescribed should have had a bearing on the result obtained. The important point to note is that the "Indian doctor" positively assured the family that a cure would result and that he had inspired them with faith sufficient to get the miserable creature to submit to take this horrible dose.

Money in "Absent Treatment"

In another place visited by the writer the monthly receipts of an old lady who employed "absent treatment" as a therapeutic means amounted to between eight and ten thousand dollars. She conversed intelligently about the value of suggestion as a therapeutic agent and admitted frankly that her results were obtained by the combined employment of suggestion and deception. She had numerous letters from apparently inte ligent people declaring their gratitude for the relief that they had received through her treatment, and she was undoubtedly bringing relief to hundreds and thousands of psychoneurotics when the United States government interferred with her game. If people were credulous enough to pay her the price in advance, they were sufficiently amenable to suggestion through letter to yield to her treatment.

Are Ninety-five Percent Fools?

In another instance a physician was employing a small electric light to look down his patient's esophagus to diagnose stomach diseases. He at once described all sorts of morbid conditions, frightened his patients into paying a good fee in advance, and then

proceeded to produce a remedy that was supposed to give infallible results. A former classmate called his attention to the absurdity of his methods and asked if he did not know that such procedures could only appeal to unintelligent people. He in turn asked what percent of that city's population were intelligent people.

"About five percent," was the reply.

"Then you go on and practise for that five percent," said he, "I shall continue to work for the remaining ninety-five percent."

But such procedures are not limited alone to those supposed to be flagrant charlatans. In one city the writer witnessed several surgical operations upon one neurotic woman, these consisting of a ventral fixation, an appendectomy, an ovariotomy, a curettage and a perineorhaphy.

A well-known pathologist stated upon one occasion in the presence of the writer that seventy-five percent of all neurasthenics had sufficient degeneracy in the appendix to justify an appendectomy; and then he added that seventy-five percent of the American people were neurasthenics.

Surgery and Neurasthenia

In the various sanatoria throughout the country a considerable portion of the patients are those who have been operated on for some minor structural abnormality and in whom the neurotic manifestations had been aggravated instead of ameliorated. These people are overpersuaded into a surgical operation for the relief of some local manifestation of a general condition of physiological incompetency. As bearing upon the subject of the relation of surgery to neurasthenics, no less an authority than W. J. Mayo stated that neurathenics had furnished more material for experiments in surgery than dogs. The neurasthenic becomes the easy victim of all sorts of quackery; the electrotherapeutic quack, the surgical enthusiast, the osteopath, the Christian scientist, the faith-healer who has diplomatically called his religious therapeutics "psychotherapy," as well as the patent-medicine vender and the medical quack.

This discussion can only be distasteful to the man who abuses his privilege as a physician or surgeon, as it is also to the quack who lives and thrives upon the credulity and ignorance of those who are honestly and sincerely seeking relief and who have found in his dishonest egotism a form of disguised psychotherapy that had brought relief under the pretense of applying some special remedy.

The eight years spent by the writer giving practical instructions to the physicians of a considerable portion of our country has given him excellent opportunities to know the "ins and outs, pros and cons" of all varieties of medical practice, and when the abuse of the psychic factor in therapeutics is found to be so universal among some of all classes of practicians, it causes one to question seriously (when he considers) where quackery begins.

Do Not Neglect It Because It Is Abused

Because psychic treatment is abused by the quack, the charlatan, and even by some physicians, many pseudo conservative physicians are disposed to turn a cold shoulder to it, as if the neglect of a potent and legitimate therapeutic resource was more disgraceful and distasteful than the abuse of it.

The fact is, physicians in general have had but little or no training in psychology, and consequently they are unprepared to appreciate the importance of psychic treatment as an adjunct to the available resources of the general practician. In their unconcerned apathy as regards this factor in therapeutics, they are allowing every possible phase of quackery to employ a method in disguise which is in reality the most potent therapeutic resource at our command today.

A physician in a western city who doubted the influence of suggestion upon the physiological processes of the body insisted upon using his own driver for demonstration-purposes, and after he had induced a suggestible condition, I advised him to suggest to his subject that he had taken a dose of ipecac and was going to vomit copiously. When the young man's stomach was completely emptied of a hearty meal which he

had just finished eating and the physician had produced anesthesia by suggestion so that a steel pin thrust through his under lip did not cause bleeding or the least evidence of pain, my friend deliberately leaned over a table and requested one of his colleagues present to kick him good and hard for having been so ignorant as to doubt the efficacy of the measure so long.

What Psychotherapy Really Is

Psychotherapy is applied by the employment of suggestion both with and without hypnotism and it finds its application to all forms of medical practice, as an adjunct to the recognized therapeutic agencies, whether the condition be acute or chronic, gynecologic or surgical, obstetric, pediatric, neurologic or otherwise.

Unquestionably in the general practice of medicine is the field wherein its employment is attended with the most gratifying results. Without an intelligent conception of psychotherapy so many of the cases of the general practician that are within his legitimate domain are likely to fall into the hands of the specialists who are so rapidly crowding him out of work. His work is preventive as well as curative, and many of the more serious pathological lesions begin as functional disturbances, the neglect of which result in gross pathologic changes. It is in functional disorders that psychotherapy is preeminently applicable, and if taken in their incipiency, as when discovered by the general practician, they could be easily handled and relieved from the consequences which must be the inevitable result if neglected.

Morphine Used in Pneumonia

But psychotherapy finds a most important field of application in the treatment of the acute diseases as well. Only recently the writer attended a medical society where the employment of morphine hypodermically was freely advocated for the relief of the pain that accompanies acute pneumonia. It was no surprise to me that the physician advocating its employment stated that fifty percent of his cases of pneumonia terminated fatally.

Another physician present referred to the hypodermic employment of morphine as "a sheet-anchor for the relief of the pain that accompanies acute lobar pneumonia," and he also stated that at least twenty-five percent of his pneumonia cases terminated fatally.

My own convictions in regard to the dangerous consequences of the employment of morphine in the treatment of pneumonia were such that I felt impelled to preface my remarks in opposition to the treatment advised by the statement that within ten years of general practice I had never treated but one single case of pneumonia that terminated fatally in a person above two years of age, and that was in the case of an elderly person complicated with pleuritis attended with an enormous effusion. The employment of morphine in the treatment of pneumonia, I said, I regarded as criminal, as helping the disease to kill the patient, nor did I hesitate to state that patients who recovered under such treatment did so in spite of the disease and the treatment. Quinine I used in moderate quantities, 20 to 40 grains per day, in 5-grain doses, but the pain and other nervous manifestations I controlled by the alternate application of hot and cold poultices, or hot poultices only, together with the free and intelligent employment of suggestion. Of course other remedial agencies were also employed, if indicated, but I am now speaking only of general treatment.

As illustrative of the value of suggestion in the treatment of pneumonia, every general practician has had experiences where some special domestic remedy, a poultice or blister or other agency, was permitted to please some member of the family or a relative and was attended by immediate beneficial results which could not be explained by the physical effect of the remedy otherwise than its use as a means of suggestion, supplemented by the confidence and expressed assurances of someone present.

How to Get the Patient's Confidence

There is no better method of gaining the confidence of some patients than by giving a drug that will produce specific results,

given with the assurance that a specified result can be expected. Here we get not only the physiological action of the drug employed, but also find in a drug producing a result that can be specified a most powerful means of suggestion.

Disease is a condition wherein the cells of a part of the organism do not properly perform their functions. Medicinal prescriptions, mechanotherapy, hydrotherapy and dietetics will not meet the requirements of the vast majority of sick people without due attention being given to the psychic factor in therapeutics. The remarkable therapeutic results of all forms of charlatanism who rely on nonmedicinal methods of treatment are due to the employment of the psychic factor in therapeutics.

In many cases a cure can only be effected by directing or influencing the patient's subconscious psychic activities or involuntary physiological processes until he or she can, by such aid, secure that degree of physical and mental stability to enable the cells of the organism unaided and alone to reestablish a condition of health.

An important function of psychotherapy is that of training the patient into the exercise of such habits of thought and action that the physiological requirements of health will be secured and maintained. Hence our psychotherapy, to be rational, must embrace not only psychological methods, strictly speaking, alone, but physiological and educational therapeutics as well.

The Rationale of Psychotherapy

Rational psychotherapy must embrace all methods of influence that can be exerted upon the patient's habits of thought and action, such as will not only influence involuntary functional activity but also secure such a conformity to the physiological requirements of health as will best allow the wonderful recuperative power of the cells of the organism to reestablish and maintain a condition of health.

The physical effect of psychologic influences has not received the consideration that this important psychological fact deserves on the part of the general practician. We have not truly estimated the importance of such therapeutic resources as will best maintain a heightened degree of resistive power in the cells of the physical organism so that the more serious structural chances would not result. When a more perfect state of health is maintained by the general practician, the surgeon will have fewer pathologic lesions to fall to him for relief. Maintain a heightened degree of resistive power in the cells of the human organism and there will be fewer gynecologic cases, less tuberculosis, fewer eye, ear, nose and throat diseases, and even the cases that fall to the lot of the general practician, such as the infectious, contagious and febrile diseases, will be of milder character and fewer in number. But the office work of the general practician will be more remunerative and the dignity of his role among medical men will be more justly esteemed.

At this stage of the development of psychotherapy, considered as an adjunct to the general practice of medicine, many physicians lack that altruistic quality of personality or of character to make use of this measure as it so preeminently deserves. But the man who is disposed to do all within his power to help his patients to help themselves, and who qualifies himself for such work, finds in psychotherapy a practical, tangible, reliable therapeutic adjunct, which is the means of bringing relief to a large class of patients that can not be relieved by the employment of any other therapeutic resource.

Lessons in Hot-Air Therapy

Lesson two, outlining the indications and the contraindications for hot-air treatment, and giving the ordinary technic for its proper application

By EDWARD A. TRACY, M. D., Boston, Massachusetts

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THE indications of hot-air treatment are well defined, though the limitations of this method of cure have not yet been worked out. I mean by this, that there are medical cases in which the pathology would seem to indicate the use of hot-air hyperemia, but in which it has not been tried as yet, or if tried, the reports of its use and the results have not been published. For example, in pleurisy with effusion it would appear to be rational to apply hot-air hyperemia to the affected side, for the purpose of abating the pain frequently present and to bring about absorption of the exudate present.

I am glad to mention here the efficacy of calx iodata in this affection. Recently I was called to see a patient in consultation, the patient having pleurisy with effusion on the left side. I mentioned to the family physician that I had used this remedy with success in similar cases and advised its use. Three weeks later he reported to me that he had used it in this case, and that the effusion had disappeared, the temperature had become normal, the patient's appetite was good, and he was back to his work again. This case was probably one of tubercular origin, the patient having a fistula, and a history of previous spitting of blood a couple of years back.

The Rational and Clinical Indications

The rational indications for hot-air treatment are local conditions in which we have reason to believe that an increased local arterial circulation will be beneficial, that it will have a tendency to remove the cause of the trouble. These indications coincide quite generally with what may be termed the clinical indications of hot-air treatment. By clinical indications I mean that hot-air treatment has been used for the affection successfully by many in similar cases, and therefore is advisable. For briefness, I shall use here the term "indications," meaning the empirical or clinical indications. Many rational indications for the use of hot-air hyperemia have yet to be worked out, tested, before the conditions be recognized as indicating clinically the application of this efficient mode of treatment.

Perhaps the most general use of hot-air treatment is in chronic rheumatic arthritis, and in osteoarthritis.

It is particularly efficacious in the subacute, and the chronic form which has lasted for a few months or longer.

It is indicated in acute traumatic synovitis, often associated with a wrench or sprain of the injured joint. There is no treatment comparable in efficiency with the hot-air treatment of these cases. The patient, as a rule, can keep on in his usual avocation while under treatment.

Another indication is neuralgia, facial, sciatic or of the lumbar nerves.

Another important indication is in the treatment of fractures, to hasten bony union, keep up muscular nutrition, and hasten absorption of exudates, especially when a joint is involved.

In dropsy and eclampsia, hot-air treatment is frequently an important adjuvant to correct medical treatment.

In chronic ulcers, hot-air hyperemia is frequently successful.

The Contraindications for Hot-Air Therapy

Having mentioned the indications for hot-air treatment, indications generally admitted by physicians the world over, I shall

mention the contraindications taught by Bier, and add one or two that my own experience has led me to believe are such.

In joint tuberculosis hot-air hyperemia is contraindicated. Bier teaches that it is productive of abscess formation in such cases. I have one such result in a patient who was treated in a public dispensary, and who was subjected to two weeks of hot-air treatment of tubercular disease of the metatarsal joints. An abscess promptly appeared. This was incised. Six weeks after he came under my care. His case interested me very much at the time as it furnished me with a case of tubercular sinus. This was treated by Bier's suction hyperemia successfully.

Another contraindication taught by Bier is the menstrual period. A metrorrhagia is liable to be produced. I recall a case of chronic ulcer of the leg that was yielding nicely to hot-air treatment, the patient being a woman many years past the menopause who had been troubled for years with an occasional flowing. She had been treated by a good physician, who told her it was due to plethora. She was a ruddy woman of 340 pounds, and I agreed with him till after using the hot-air treatment for several weeks a metrorrhagia was suddenly produced upon which ergot had no effect. Curetment was done, adenocarcinoma found, and later the womb was removed by a skilful surgeon, with good recovery. In this case the pathologic condition of the womb had evidently existed for several years. The hot-air treatment intensified the flowing, a symptom of the trouble, and by this means brought about treatment (curetment) that made the correct diagnosis possible, and thus led the way for the removal of the diseased womb with such a happy result.

Bursitis Subacromialis

There is a fairly common injury to the shoulder, manifested by disability in lifting the arm. This condition is due to inflammation and thickening of the sac, or bursa, that lies between the acromion and the head of the humerus. It is usually described as periarthritis, but Codman of Boston has done a splendid piece of work in showing the true pathologic anatomy of the condition, and giving it the more accurate name of bursitis subacromialis. As has been said, this bursa is frequently injured in accidents to the shoulder, and as a consequence becomes inflamed, thickened and painful. On lifting the arm, this painful membrane is pinched between the acromion and the head of the humerus, and disability results. The diagnosis of subacromial bursitis is easy with this knowledge of the anatomy. Pressure on the arm just below the acromion produces tenderness. There is inability of the arm to be raised except with pain, especially marked as the bursa is going under the acromion. Examination of the humeroscapular joint is negative.

This injury is likely to be slow in recovering, many cases requiring a year. The bursa has been dissected out in some cases with a speedier cure. In some cases recovery takes place in a couple of months, without operation.

I have tried hot-air treatment on several cases of bursitis subacromialis without any marked improvement taking place as a result of the treatment. I should say this treatment was contraindicated in this condition, not because it has any injurious effect on the pathological condition present, but simply because it is a waste of effort without a compensation in curative effect.

I have gone into the subject of bursitis subacromialis rather freely for the reason that this injury of the shoulder is important from a practical point of view, and because it has not yet got into the textbooks.

The Technic of Hot-Air Treatment

Having mentioned the indications for hot-air treatment, and the few contraindications to its use, I shall describe the method used to produce hot-air hyperemia.

The technic is a modification of Bier's, inasmuch as his apparatus, consisting of wooden boxes for the different parts of the body, are replaced by collapsible chambers which can be adjusted to the various parts of the body, and allow the part treated to be surrounded by hot air of the required temperature, just

as in Bier's original apparatus. The fuel made use of is denatured alcohol, now sold at a low price throughout the country. The lamp in the heat-generator has a contrivance by which the size of the flame, and therefore the degree of heat, is easily controlled.

The hot air should come in contact with the bare skin. This is Bier's teaching, and it is the part of wisdom to follow the master. He has found that the bare skin cannot stand a temperature of more than 237°F.

In applying the treatment he advises that the sensations of the patient be always consulted, and that they should be a guide for us in the degree of heat applied. The patient's feeling should be one of comfort. If there is any complaint of the heat, the temperature should be lowered. This teaching has guided me in the application of hot-air therapy, and in the light of experience, I consider it eminently safe. With the apparatus used, a temperature up to 300°F. can be obtained, but in all cases the sensations of the patient have been the guide in the application of the temperature employed in giving the treatment, and this has been found to vary from 180° to 225°F.

The object of the application of hot air is to produce an arterial hyperemia of the part treated. The attainment of this object is made manifest by the redness of the skin that occurs after the hot air has been applied to the part treated for a short while, and also by the perspiration present. This hyperemia is not only in the skin but down in the tissues beneath the skin.

The modification of Bier's apparatus employed has the added advantage of portability. The whole apparatus is packed into a box 11x17x17 inches, and permits of easy transportation to the patient's home.

In a future article I shall illustrate the use of the apparatus in producing hyperemia of the various parts of the body as well as of all the body, as when a general hot-air treatment is given for eclampsia, dropsy, or for chronic rheumatic multiarthritis.

Eye-Symptoms in General Disease

This article is the seventh and last of the excellent series contributed by Dr. Shastid on this subject—a series which should be closely studied by every general practician, since it is filled with invaluable diagnostic aids

By THOMAS HALL SHASTID, A. M., M. D., LL. B., Marion, Illinois

VII.—SCLEROSIS OF BRAIN

THE ocular manifestations of disseminated sclerosis of the brain and spinal cord do not as often set in early—i. e., are not so often the initial symptoms of the general disorder—as is the case with the ocular lesions of locomotor ataxia, and, as a natural result, the eye-complications of disseminated sclerosis do not possess so great diagnostic importance as happens to be the case in the other affection. Nevertheless, the ocular lesions of disseminated sclerosis do sometimes set in early, and, even when they set in late, are always significant and interesting.

The ocular lesions of disseminated sclerosis may be grouped as follows:

1. Affections of the muscular apparatus (pareses and paralyses of the accommodation—ciliary, or intrinsic, muscle; pareses and paralyses of the extrinsic muscles; nystagmus).

2. Affections of the optic nerve (with or without blindness, with or without ophthalmoscopic changes.)

Affections of the Muscular Apparatus

Pareses and Paralyses of the Accommodation (Ciliary, or Intrinsic, Muscle).—The various failures of accommodation which

occur in insular sclerosis set in late, as a rule, and are altogether permanent. If the accommodation fails at all (which it does in merely a small proportion of cases) the paresis generally goes on rapidly to an absolute paralysis. With or without the failure of accommodation, there are almost always pupillary changes, and if the ciliary muscle has been involved, the pupils are dilated (mydriatic). Generally the pupils are contracted (myotic) and, in addition, in a very small proportion of cases, do not respond to light, although they do react to convergence (the socalled Argyll-Robertson pupil). As a rule, however, in disseminated sclerosis the pupils are simply contracted and respond both to light and convergence. This is quite the reverse of what obtains in locomotor ataxia, in which the Argyll-Robertson pupil is a very common finding.

Pareses and Paralyses of the Extrinsic Muscles.—The various palsies of the muscles of the eye which lie without the eyeball are extremely complicated and also extremely interesting, but, as has been the case with these affections in connection with certain other constitutional diseases, the subject cannot satisfactorily be considered in this place. Suffice it that diplopia (double-vision), as a result of extrinsic ocular paralysis, is a very common symptom of disseminated sclerosis, and one which sets in earlier, much earlier as a rule, than paresis or paralysis of the intrinsic muscle.

Nystagmus.—Rythmic involuntary movements of the eyeballs, either from side to side and back again or rotatorily, is a very frequent complication of disseminated sclerosis, being found, as a fact, in rather more than fifty percent of all cases. It sometimes sets in early, and in patients from twenty to forty years of age who are not miners (nystagmus is a common affection of coal miners) is an extremely suspicious phenomenon. When latent, it can often be produced for diagnostic purposes by having the patient cast his eyes into extreme positions, either up or down, or to either side. It is now and then combined with paresis or paralysis of some of the extrinsic muscles of the eye, and then some very strange and curious combinations of subjective symptoms occur.

Thus, in a case which I saw a good many years ago, there was lateral nystagmus (in both eyes of course) and also paralysis of the right superior oblique. This patient, whenever he looked downward, saw every object double, one of each of the sets of images with its upper extremity inclined toward the uninclined upper extremity of the other, and, in addition, both the images jumping, jumping, laterally and continually, on account of the lateral nystagmus. Looking strongly to the right, or to the left, or upward, he ceased to see things double, but still experienced a constant apparent jumping, jumping, the result of his lateral nystagmus.

Affections of the Optic Nerve

The optic nerve is involved in insular sclerosis in a fairly large number of cases. The involvement sets in late as a rule (but sometimes early) and is often of sudden development. Sometimes there is a kind of amaurosis similar to that occurring in acute Bright's disease, of sudden onset, of short duration, with no ophthalmoscopic appearances (of course, otherwise it would not be amaurosis) and with very rapid recovery.

Again, there are clear indications of serious pathological changes in the optic nerve. Often, under the ophthalmoscope, only the temporal third of the papilla (head of the optic nerve) is seen to be atrophic (i. e., white and glistening, instead of pink or reddish); in other cases all the papilla is atrophic and white. In some of these cases of obvious pathological alteration it is very remarkable indeed that no decided disturbance of vision is found, at least for a considerable time. After awhile, however, in all these cases the sight deterioriates seriously, though total blindness as a result of disseminated sclerosis is uncommon.

The optic-nerve involvement in disseminated sclerosis always is due to the development of sclerotic nodules in the optic nerves themselves, never in the optic chiasm or the optic tracts.

Value of the Ocular Symptoms of Disseminated Sclerosis as a Means to Diagnosis.—

The general disease in question has not infrequently to be especially distinguished from hysteria. Bearing in mind, then, the ocular manifestations both of hysteria and of insular sclerosis, we are able to make the following rather formal discrimination by means of the ocular lesions only, between these two diseases. In hysteria there are no ophthalmoscopic changes; in disseminated sclerosis these changes constitute perhaps the rule rather than the exception. Again, in hysteria, while oculomotor involvements are not extremely rare, yet nystagmus is never found, whereas in insular sclerosis nystagmus is, as we have seen, a prominent symptom in more than half of the cases. Finally, in hysteria concentric (i. e., peripheral) contraction of the visual field is very, very common, but scotomata rare; whereas, in disseminated sclerosis the peripheral contraction is only moderately common, and central scotomata more so.

With these three distinguishing points in mind (relating to the ophthalmic changes, to nystagmus, and to the visual fields), the differential diagnosis between hysteria and disseminated sclerosis will often be greatly assisted.

Finally, in closing this series of papers, I should like to make a plea for the use of the ophthalmoscope by the general practician as a means to general diagnosis. The usual objection is (as always) that art is very long and time is very, very fleeting, and that the art of ophthalmoscopy is long, with a capital nitial L.

But, while the skilful use of the ophthalmoscope is difficult to learn, the fact indeed remains that, even amid the embarrassments of a general medical practice, a man can learn, by merely a few months' exercise and effort, so to employ the ophthalmoscope (at least on the cocainized eye) as to bring out clearly before him a multitude of changes of the very existence of which he perhaps had never dreamed. And almost all these changes will prove to be both interesting and beautiful, and also, at times, of service in the saving of life.

Membranous Croup and Diphtheria

A discussion of the relationship existing between laryngeal diphtheria and membranous croup. The alleged identity of these two terms is discussed and treatment is carefully considered

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I DO not know that I can give any specific reason for selecting this subject. It is not because I possess any special knowledge on the subject nor because I know more about it than you do. But I had to have some subject, and as I have had quite a few of these cases on which I used various remedial measures, in various manners, under various conditions, with various successes and failures, I decided that the cause, treatment and management of such cases might be worthy of a discussion in a medical society. And I felt that this theme, quite as well as any other, would offer the prime essential of a subject presented to a medical society, namely, *to make us think.*

It is very difficult indeed to remain stationary in educational matters, while thinking. The general object of human thought is to broaden our mental scope, give us a grander individuality and make us better beings. The special object of doctors thinking on medical subjects in medical-society meetings is to make them better practicians. I shall then be satisfied if in my humble manner I can provoke some thought on this subject.

Of all the pathological conditions with which the general practician comes in contact, those of the throat, larynx and trachea perturb him most. And I feel that of these those of the larynx cause the greatest degree of worry and anxiety. Where is the doctor who has not had these hours of trial, when he felt his utter insignificance, felt his professional dignity fading away like a thin mist!

There was an infant, who but a day gone by was a beautiful, plump, healthy child, now struggling for life in the grasp of a disease he could not master; restless, cyanotic, with outstretched arms passing to and fro from father and mother, face full of despair, painfully anxious and with a look no mortal can describe imploring you—all of you—to help. And—but you have all witnessed the scene. Can anything excite within us more poignant feelings of sympathy than one of these deathbed scenes?

As the general practicians must ever remain the specialists in these cases I see no relief from this perturbance other than through a still more uniform mode of procedure in our treatment.

Membranous croup is of ancient origin. So far as I can learn every language has a word for it. In times past it has occurred occasionally in epidemics. In 1805-7 an epidemic of membranous croup spread over the greater part of the European continent. In the year 1807 Napoleon ordered the Faculty of Medicine of Paris to make inquiry into the nature of the disease and offered a prize for the best essay on the subject. From the two prize essays by Jurine and Albers and other valuable treatises presented at the time began our more enlightened study of the disease.

Diphtheria and Membranous Croup

It is well settled that from this investigation came the thought that what we now call diphtheria and membranous croup might be the same disease. The discussions and investigations since that time, while not making it conclusive that membranous croup is diphtheria, have however shown that there is such a disease as diphtheritic croup.

As I now enter into an investigation of the discussions, thoughts and opinions of the different members of the medical profession since that time, I am more than ever impressed with the familiar phrase, "Many men, many minds."

Quite a few accepted the thought of its being diphtheria, but after having a number of cases recover with but little medication they changed their minds. A greater number did not believe it diphtheria at all, yet a disease with similar symptoms. Then after losing a number of cases they took a position of doubt. Many claimed that diphtheria and membranous croup were often associated and that this was what led to the confusion. Others claimed that they did not know which it was and would not believe that anyone did know.

In this wise the profession step-laddered through the years up to 1878, when a number of the more scientific members of the profession were satisfied that membranous croup was a diphtheria. But yet at this time Niemeyer and Aitkine, supposed authorities, said that membranous croup was "an inflammatory affection of the trachea and larynx, specially characterized by the formation of a false membrane, distinct from other diseases, apparently but not really identical, especially so from diphtheria." Moir, in *The Edinburg Medical Journal*, 1878-79, quotes Daviot as saying: "Croup is noncontagious, and diphtheria and croup are the same, therefore diphtheria is not contagious."

"Croupous" and "Diphtheritic" Used Synonymously

Along strict pathological lines the discussions and opinions have not been so varied. All have agreed to an inflammatory process producing a false membrane. But as to whether it was idiopathic or not they were divided. Some held that the croupous membrane was idiopathic but the one now called diphtheritic was due to an infectious inflammatory process. In 1826 Bretonneau first accurately described diphtheria, and even named it, and asserted that croup was merely laryngeal diphtheria. For more than twenty

years France has used the terms croupous and diphtheritic synonymously. Most of the English physicians use the terms in the same sense.

Until quite recently pathologists have held that there is quite a difference between the two membranes as to the depth of involvment; the croupous one involving only the epithelial layer of the mucous membrane, the diphtheritic one the corium; the croupous membrane formed chiefly of coagulated fibrin, the diphtheritic one composed of tissues which had undergone coagulation necrosis, and bacteria.

Pathologists now however are not so sure that the depth of involvement distinguishes them, but feel sure that there is a difference microscopically. The fibrinous one has the appearance of lymph—a network of fibrin containing in its meshes a greater or less number of leukocytes, exfoliated epithelial cells, etc., and it is easily stripped off. In the diphtheritic the deeper parts consist of greatly swollen homogenius cells whose nuclei have disappeared. It is not so easily stripped off and if deep can with difficulty be removed. It will also immediately reform. But they have also found that fully 80 percent of membranous-croup-cases contain the Klebs-Loeffler bacilli. In about 20 percent they have not yet been found. Not a similar percent of severity and death, mildness and recovery do the general practicians find. Now remember that not all known cases of diphtheria are equally severe. Could it be that the 20 percent represent just mild cases of diphtheritic croup? Or have we a membranous croup that is not diphtheritic?

Let us not be too hasty and say they are all diphtheria. Let us not be too hasty and say some are not diphtheria. Haste has done more harm than good to the medical profession. It is the mother of the majority of our fads. But if we have to make haste, let us "make haste slowly." Let us think a little, let us ask a little. Let us ask what the men who do the fighting—that great army of active practicians, who see but little laboratory experiences, but see many bedside experiences—ask what they think about it. The majority of this great majority tell us that there are cases which are not diphtheritic.

How Can We Be Sure of the Diagnosis?

But how are we to be sure? It is utterly impossible to make a culture-test in every case. Many times you cannot take the time to make a culture, besides these laboratory tests are not always conclusive. The present microscope says there is a difference, the great body of close clinical observers say there is a difference.

If there is a difference in pathology there must be a difference in diagnosis and treatment. How can we tell the difference? As we haven't always the time for the microscope to do it, we must learn to do it clinically. Some authors say it is very easy to do this, others do not say how easy it is. Let us talk a little of the differential diagnosis and then see how easy it is.

Dr. Gay, in the "Reference Hand-Book of the Medical Sciences," Volume II, page 340, has this to say in regard to the diagnosis:

"There is an acute noncontagious and noninfectious disease of the larynx, local in its nature, confined to the upper air-passages, not epidemic, characterized by the formation of a false membrane, which causes the principal symptoms, dyspnea, and very often destroys life. This is primary croup.

"Second, there is an acute contagious infectious and often epidemic affection, presenting a membranous deposit in the fauces, larynx and other localities, accompanied by symptoms of blood-poisoning, such as enlarged glands, nasal discharge, albuminuria, paralysis, debility and coma. This is a diphtheritic, or secondary, croup."

It does seem that the diagnosis would be easy. But not every case has the symptoms thus nicely differentiated, and besides most of the cases become cases of mixed infection, changing the clinical picture a great deal; and then in neighborhoods where tonsillar diphtheria is prevalent you are still more liable to be confused; so the diagnosis is not readily made.

The dashing, brilliant, abrupt diagnostician often has to be in the embarrassing position of explaining the why and wherefore

of a certain case taking a different turn, and the scholarly laboratory diagnotician who perches too high on the scientific tree often makes a fool of himself even among the ignorant, and writes death-certificates.

I have arranged the symptoms of each disease in two opposing columns, placing those of diphtheria in the first, or left-hand, column, and those of membranous croup in the second, or right hand, column.

DIPHTHERIA	MEMBRANOUS CROUP
Is due to K.-L. bacilli.	Seems to be due to exposure to cold.
Incubation period varies, maybe from 1 to 20 days, usually 2 to 5.	Has no incubation period that we know of.
Is a constitutional disease with formation of membrane.	Seems purely a local disease with formation of membrane.
Adults occasionally are affected.	Adults perhaps never affected.
Rather slow in onset, child may be fretful and languid for two or three days before croupy symptoms develop.	Rather sudden in onset; mostly at night.
Loss of strength is very early manifested.	Loss of strength is rather tardy, due mostly to heavy efforts of coughing.
Often complications and sequelæ.	Never any complications and seldom sequelæ.
Glandular involvement.	No glandular involvement.
Contagious.	Not contagious.
Convalescence is tedious.	Convalescence is rapid.
Albumin found in urine nearly in beginning.	Albumin found in urine only at close of disease.
False membrane dissolves in H_2SO_4, but hardens in potash solution.	False membrane dissolves in potash solution, but hardens in H_2SO_4.
Membrane consists of cells and masses of bacteria.	Membrane consists mostly of coagulated fibrin.
Membrane is not elastic.	Membrane is elastic.

Let Us Be Conservative

As I said before, let us not be too hasty. Let us be conservative. Fortunately for us and fortunately for the victims of these dreaded diseases we have almost a specific treatment for either. So let us make our diagnosis carefully. Over thirty thousand active practicians in the United States treat nondiphtheritic croup very successfully. A majority of all the practicians of the United States treat diphtheria and diphtheritic croup very successfully. Now, when shall all the practicians treat both diseases very successfully?

These are diseases wherein the treatment becomes a means of diagnosis. I shall speak of this later.

The original treatment of membranous croup was calomel, followed by emetics, fumigations, etc. After a while to this was added the operation of tracheotomy. This treatment was followed by tracheotomy and intubation. Later the treatment became intubation and antitoxin. Now the treatment is or should be antitoxin, and if necessary, intubation. It is now very rarely necessary to perform the operation of tracheotomy. In cases however where the stenosis becomes very urgent the operation may yet be necessary, or in cases where by intubation the membrane is pushed down the trachea the operation is immediately necessary.

More than thirty thousand of our practicians treat nondiphtheritic croup with dark iodide of lime so successfully that the mortality is practically *nil*. This preparation seems to be as near a specific for this affection as antitoxin is for diphtheria.

For the last ten years I have observed that if this treatment is persisted in for twelve hours without any benefit the case is one of diphtheritic croup and will yield to the treatment of antitoxin. My belief is so strong in this treatment that I feel competent to make my diagnosis conclusively in this length of time even early in a case, and I do not remember of ever being compelled to change my diagnosis.

The medical world—please permit me the phrase—is much like any other world, prone to run to extremes. At first the cases were all nondiphtheritic, now the tendency is to call them all diphtheritic. If more doctors would more often use dark iodide of lime, these diseases would be less dreaded and the medical world would learn that there are nearly as many cases of membranous croup, nondiphtheritic, as there are of diphtheritic.

I wish to give my idea of the treatment of these diseases more specifically.

In nondiphtheritic croup I use the iodized calcium (calx iodata), usually giving it in warm solution.

In diphtheritic croup, on the other hand, I use antitoxin in rather large doses, and I often find it necessary to intubate in connection. Intubation is not difficult and should be readily done by any practising physician. I believe all doctors should be able to do this simple operation. Parenthetically I wish to say that the performance of this operation should be one of the many requirements for graduation from our medi-

cal colleges. Practice upon the cadaver should be obligatory.

The practician who possesses the proper knowledge of the therapeutics of the dark iodide of lime and the value of antitoxin and has the ability to intubate properly can march against these two fell diseases in the spirit of a conqueror.

Diphtheritic Croup Treated with Antitoxin

Now, remember the treatment of diphtheritic croup is not intubation, nor intubation and antitoxin, but *antitoxin*, with intubation if necessary. The later reports of the American Pediatric Society say in substance that intubation saved 27 percent of laryngeal stenosis. Antitoxin and intubation now save 73 percent. Sixty percent of stenosis-cases do not require intubation at all if antitoxin is used. If all practicians would use antitoxin in doubtful cases at once, and in all other cases if not improved by the iodized lime treatment in twelve hours, the percent of stenosis-cases not requiring intubation would be still larger and the mortality much less.

Nearly ten years ago I believed that the spread of diphtheria was made easy by the fact that many of these stenosis-cases were really diphtheritic. No isolation or fumigation was then required. We now know that this was so. A number of times I have had a case of diphtheria in a certain house at one time, and some time afterward in the same house but in a different family (moved in) I have had a membranous croup-case. I have had also just exactly the reverse in other houses. Were they coincidences? In passing, may I say that, having had some of these cases in exactly this order, I have thought it would be a wise provision to have houses that have become infective with diphtheria or membranous croup branded to that effect. Can not we all recall deaths in new and innocent families in some of these infective houses?

I believe it is possible to rid the world of infectious diseases. May I entertain the hope that we shall some time succeed?

In order to know how some of the other cities looked upon membranous croup, I sent the following letter containing five questions to the Health Boards of St. Louis, San Francisco, Lawrence, Denver, Detroit and Chicago:

"I am preparing an article on membranous croup for a medical society and am gathering data. Would you be kind enough to answer the following questions: (1) Does your Health Board ask reports from practicians in membranous-croup cases? (2) Do you quarantine houses where inmates are so infected? (3) Do you permit the children of infected families to attend the public schools? (4) Do you fumigate houses known to be infective? (5) Does your Health Board consider membranous croup as being a diphtheria?"

I received answers from each board. The answers were alike save that the Denver Board does not consider membranous croup diphtheritic unless proved so by a culture-test.

The answers received were as follows: No. 1, yes. No. 2, yes. No. 3, no. No. 4, yes. No. 5, yes.

From these we gather that these health boards, with one exception, treat everything in the way of croup other than spasmodic as a diphtheria. Have we not shown that some are not diphtheritic?

In the face of the fact that some are not diphtheria, is it perhaps for the public good to treat all as diphtheria? Or would it be more to the public good to make doctors better diagnosticians and treat the cases for what they really are? Perhaps the wise legislators felt that the doctors could not differentiate and gave the health boards no discretion in the matter.

Let Us Help the Health Boards

But, anyway, these health boards are helping to rid the world of infectious diseases. Let each practician help ever so much by educating his patients that they should be clean, sanitary in their surroundings, that most of the germs of the infectious diseases enter the body by the mouth—very few being able to enter by the nose as most of them die soon after entering; that the nose should be kept open all the time and the mouth

closed—most of the time; that the mouth should be kept clean, the teeth kept clean and sound.

Don't you know that if the government compelled people to live cleanly, and have clean mouths and teeth, many of the infectious diseases would be far less prevalent? It would be the greatest weapon yet used in our fight to rid the world of infectious diseases.

In closing my paper I will venture one further digression. Let us work for a sound system of guarding the health of the children. Let us feel that a scientific, non-political inspection of school-children is a moral public necessity. Let us work until it becomes a legal crime for parents to neglect their childrens' mouths. Let us work for a school inspection that is not a farce. Let us work until this is accomplished intelligently. The report should read, "See your dentist," or, "See your doctor"—one or both. On the report should be a space for the report of the dentist or doctor. Each state can well afford to pay a handsome sum for the intelligent inspection of the children. Who can calculate the amount each state would save financially, morally, by so doing?

Tuberculosis: the Question of the Hour

A review of tuberculosis; what can we do to arrest its spread? How can we recognize it in its early stages? What shall we do for the tuberculous patient—and with him?

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THERE are three great predisposing causes of pulmonary consumption as we know it, viz., tuberculosis, the uric-acid diathesis, and syphilis, or their combinations. The individual with tissues depraved by one or more of these diatheses is unable to resist normally germ invasion, or to throw off the toxins generated by them in the blood.

The blood previous to the infection of the host by the bacillus tuberculosis, while it may present normal findings under the microscope, will be found lessened in quantity, wanting in activity of the cell function, and lacking in the normal percentage of nutriment or of fat which it should contain.

In tubercular subjects we find a condition of poor nutrition, dependent not so much upon a deficiency of quantity or quality of food ingested, but more upon the relatively poor assimilative status that prevails, due to the infection of the digestive tract.

As a rule one is able to trace errors in nutrition, antedating for months, often years, the probable period of infection in a given person.

The interest of the State (the public) in the white plague lies in its preventability, in the movement directed against the same, nearly all legislative action and aim of education (except such as relates to public sanatoria) being directed toward means which will prevent the diffusion of infection, for regulation of personal habits, practises, and the care for those so afflicted. Such enactments should be explicit in elucidating the details of ventilation, the shelter of doors, the enclosing of porches or erection of new ones, tents, shacks, protective dress and clothing, etc.

The morbid fear that all are to succumb to tuberculosis unless we get rid of those so suffering calls for conservative education. This has gone so far as to deny to such patients hospital accommodations; exclusion from the territory of the state; or corralling and penning our tubercular sick until they get well or die. Missouri and some other states have recognized the duty they owe their sick wards and have commenced caring for them in state sanatoria; and private enterprise has done much in the same direction.

The physician must educate the general public in the methods necessary for the control of this white plague, and part of the effort to inform our people must be to let them appreciate the importance of an early recognition of the malady. The education of the afflicted and their family should be furthered by reading the current journals that specially treat of the subject in hand. *Outdoor Life* is the name of a monthly publication edited at the Adirondack Cottage Sanatorium at Saranac Lake, to mention one such.

In Iowa alone there are 2000 deaths every year from tuberculosis; on an average each one of these persons infects four others, some fatally. The educational endeavor in that state has proceeded so far that a booklet defining these facts has been printed by the Department of Education and distributed among 42,000 pupils. Every patient, no matter how far the disease has advanced, can be so treated that he will not give the disease to those about him. There remains much to be done in the way of legislation, by enactments regulating the width of streets, the height of houses, and above all, the preservation of the open spaces—such ordinances imply breathing space.

There is not a particle of doubt but that tuberculosis is a communicable disease. Texas has passed a law quarantining against tuberculosis. Legislation should place it among the notifiable diseases, and upon death the premises should be disinfected free of charge. This disinfection should be extended to every dwelling that has been vacated by a consumptive, and should be enforced in hotels, lodgings and resorts frequented by tubercular subjects. It should be illegal to let such premises within two months without previous disinfection; it should be an offense wilfully to conceal such facts.

Diffusion of Tuberculosis by Contagion

The patient endeavors of a Cincinnati physician, if we remember correctly, has contributed a method of demonstrating the diffusion of tuberculosis by contagion; this has been copied in other cities, notably in New York. The doctor conceived the idea of obtaining, through municipal health departments, from the certificates of death, the number of the residence property of all the tubercular decedents. Upon a copy of the city plats, delineating the subdivisions and streets, he located the lot where was the domicile of the deceased, and for each death he placed a cross upon the corresponding residental site. This form of record was compiled for some years, the result showing that the mortality from tuberculosis had a grouping that marked certain sections of the city.

Thus in New York it was found that after locating such white-plague districts, and tracing the different families who had occupied such tenements, flats or houses (finding out where they came from, with a family history from each domicile) that the occupation of such infected quarters surely resulted in tubercular consumption, with its terrible fatality.

What an awful lesson of neglect and mortality such positive proofs give us! And will our race become derelict and will the law (of sanitation and health) permit us longer to evade the first principles of self-preservation and to become racial suicides?

Compulsory registration seems to be imperative, with the provision that the records be accessible only to authorized individuals. Cooperation with the diseased is necessary to insure means to prevent the infection of others. Indigent sufferers not under the care of a reputable physician may be isolated.

Some Specific Preventive Measures

Dry street sweeping should be condemned as dangerous, and if the streets cannot be flushed, they should be sprinkled before being swept; the sweepings should be carted away. Antispitting laws should be enforced; public conveyances should be under sanitary control; and the smoke nuisance abated. Dairies and herds should be inspected, and the abattoir made subject to the same restrictions.

The infected individual should be informed as to the liability of infecting others. The duty obligated to sufferer and friends

is so to inform them, and it is criminal negligence to withhold this knowledge from them, or to pass off their cough as bronchitis, catarrh or weak lungs, since it renders impossible the imperative radical changes in the victim's mode of life.

The sputa should be burned (the paper spit-cups are sanitary and inexpensive), the dejecta buried in the soil not near a water course.

Our abodes of every description are the ordinary means of spreading the infection. No one should sleep in the same room with a person suffering with active tuberculosis, especially when expectorating abundantly. The care of the soiled linen, details of the silver ware (the boiling of these after use), separate beds, rooms, etc., are part of the education that needs to be taught to the young and old alike.

Children of consumptive parents should be taught to migrate and not continue to live in the home their sick parents have occupied.

The tuberculous woman should not have children; she sacrifices her life by doing so, and sometimes the infant is infected at birth. Active pulmonary tuberculosis and pregnancy constitute a dangerous complication. The remedy is avoidance of marriage.

The Koch Bacillus and Susceptibility

The presence of insects carrying Koch's bacillus of tuberculosis, especially mosquitoes, may account for its world-wide prevalance.

The colonization of the tubercle bacillus on and in the organs of the patient is preceded by a period of preparation, during which the tissues gradually become a suitable habitat for the germs. Susceptibility is not always inherited; it may be acquired, or even assiduously cultivated.

The virus of the bacillus tuberculosis increases at the expense of the physical forces of the human host; the growth of the bacterium produces poisons or toxins that lead to death, if there is no vital energy to oppose the infection. Generally the human organism reacts and nature endeavors to eliminate the virus and to inhibit the growth of the microscopic parasite.

Sunlight and air kill the bacillus, and water dissolves it out of its inflammatory encapsulation so that light and air may reach it. Light, water and air are a victorious phalanx that never lose a battle urged against pathological organisms. One of our literary masters has said: "Sunshine will kill the deadliest microbe in fifteen seconds. Cheer up!"

The main office of the bacillus tuberculosis is that of a purveyor of toxins and virus. A renewal of the disease is the rule, the infected person reinoculating himself (autoinoculation). This occurs through faulty chyle or mesenteric-gland deficiency; or he may reinfect himself from other subjects.

Human and Bovine Tuberculosis

That there is a positive difference between human and bovine bacillus tuberculosis is readily noted by all observers; the bovine is acknowledged to be the most virulent. Our observers at the Bureau of Animal Industry, at Washington, bring out the astonishing fact that the feces of cattle, whether they are affected with advanced or with mild tuberculosis, as shown by the tuberculin reaction, or if they are only fed the bacilli in the drinking water, show the presence of germs distributed evenly throughout the digestive tract. It would seem from this that we have made no mistake in dealing so effectually with the dairy cow. The only conclusion possible is that milk, butter and cheese must not be produced from any dairy cow suffering from tuberculosis.

It is difficult to resist the conviction that the consumption of unboiled milk during the period that follows weaning must exert a very powerful influence in bringing about a fatal prevalence of tuberculosis in early childhood. We should also be careful about feeding raw meat, meat juices, etc., to infants subject to wasting diseases and dyspepsia.

Importance of the Early Recognition of Tuberculosis

The late stages of tubercular consumption are recognizible to the untutored; early recognition is of vast importance, and demands skill and patience in deciding the question.

The pretubercular period, the stage of incubation with premonitary symptoms, gives rise to constitutional disturbances that induce the individual to seek medical advice; this is before there is evident lung involvement. The diagnosis at this time is most important, as the malady is more amenable to treatment and there will be a possibility of preventing the infection of others. The condition is a pathology of perverted or defective nutrition, with an implied predisposition either inherited or acquired.

About the first symptom of the pretubercular stage is an abnormal frequency of the heart's action; this persisting, after all other causes of ill health have been excluded, is of grave import. Next comes shortness of breath, with inertia of the lungs; also frequently recurring pleuritic pains or stitches. Phosphaturia is another early evidence; phosphatic absorption and fat assimilation are closely connected, both of which are perverted in consumptive or wasting diseases. Later come the complaints of a chronic bronchitis with its cough, fever, loss of weight, dyspepsia (always), etc., an array of symptoms so prominent that the aggregate serves to mark the stage of the disease rather than that of diagnosis.

The Cure Is Its Prevention

The cure is prevention, and the accomplishment of this would seem to be due to an improvement in nutritional metabolism, a rebuilding of the natural resistance to the inflammatory growth of bacteria in the wounded lung area. While no real curative medication has yet been discovered, many drugs greatly improve the course and complications of tubercular phthisis as well as palliate distressing symptoms; the medicinal treatment may also indirectly limit the extension of the infective process, conserving the vital energies and favoring the encapsulation of the tubercular inflammation.

Some cases of consumption recover without any treatment; the phthisical person who is able to eat well and digest well is practically saved. Air, rest and nutrition conduce more to recovery than any inoculation and any antitubercular serum therapy. During the earlier months of infection limited exercise, often absolute rest, is required; the individual must, when possible, take rest out of doors, no matter what the weather.

The factors in one cure were: high air, cold air, dry air, and mountain air, with a "jerked-meat" diet. The exposure to mountain air even for only a short time causes a defervescence of the fever; by breathing this atmosphere the sputa masses become smaller, they dry out and diminish in number, and are cast off daily in smaller amount until finally they disappear; concomitantly the general physical condition improves.

Value of Climate and Environment

Suitable climate seems to offer the greatest hope of arresting the morbid process, and this only in those cases in which the disease has not prevailed to such an extent as to impair the resistance of the patient. The practice of recommending a change of climate without qualification is to be deprecated. Further, the exile should be made to realize that the climate *per se* is not adequate to effect a cure. Sudden changes in the temperature of the air inhaled should be avoided.

The pine and turpentine regions of Georgia and North Carolina offer good inducements for the relief and cure of those afflicted. The benefit seems to be largely due to the climate, the peculiar nature of which allows the sojourner and invalids to enjoy outdoor life all winter.

It is always objectionable to send patients to a locality infected by tuberculosis; to herd an enormous number of such people in a few places where they would reinfect one another and increase the dangers far above what there would be at home, could not be conducive to the general welfare.

Growth of the Sanatorium Idea

The plan of organizing an Association of Sanatoria, with institutions located all over the United States, and making the general plan of administration and treatment to correspond must here be mentioned. This would make possible the exchange of patients from one to another as necessities of season, climate, altitude, relative humidity,

etc., had to be considered. This idea, which originated with a physician of the Southwest, seems to be an altruistic conception, as it concerns the tubercular invalid.

Theoretically this institutional care of our plague-stricken people could be as well carried out at home; practically it is impossible. The outdoor life at home is feasible during the settled weather, but when the inclement changes come, at the first approach of a windstorm or of falling temperature doors and windows are closed. The discipline at home never reaches the ideal, while at a sanatorium it can be as rigid as at a military camp.

The sanatoria at present can accommodate but a small proportion of the people afflicted; home treatment therefore becomes a necessity. The vast majority of these people are tied down to farmwork, the factory, trades and poverty; it is from this class that the numberless army of anxious, dissatisfied, hungry, cheerless and worked-down faces come to the physicians' office, dispensaries, scanty sanatoria, etc., and peer into the doctor's eye for help and consolation.

To those interested in the subject of institutions for the special treatment of tuberculosis information is proffered by the architect, Mr. Kimball of Omaha, Neb., relating to plans for a tuberculosis hospital. This offer comes through Dr. R. C. Moore of Omaha.

Some Curative Methods

Eventual cure depends upon no known remedy, but upon the natural powers of recuperation and regeneration. To correct the impaired digestion there must be assimilated sufficient food to supply fuel for every thought, word, action, to offset the toxins formed each day by the active disease-process; further, intestinal antisepsis, to aid assimilation and fortify the system against bacterial invasion.

Climate, rest or exercise, diet (forced nutrition ofttimes), bathing, and static electricity (this static form of electricity producing, as it does, the "x-ray", with all its possibilities, added to the healing effects of the static modality).

Systematic exercises for the chest, to provide for the expansion of its congenital or acquired narrowness; the daily use of cold water and friction, which stimulates the circulation of the surface as well as that of the interior, thereby enhancing tissue changes, throwing off waste and assimilating with greater energy; insisting upon a copious supply of oxygen and the expulsion of noxious gases through the open window, overcoming the prejudice against night air, and teaching that night air is better than no air at all.

The inhalation of manufactured oxygen is being advocated as a therapeutic measure, but the results of this expedient do not confirm its claimed benefits. Absorption of oxygen is regulated by the oxygen-carrying capacity of the blood; the ability of the circulating blood to do this healthfully is in direct proportion to the number of its red corpuscles; to fulfill its vital function the oxygen must not only be inhaled, but absorbed. The physiological ability of the blood to oxygenate and decarbonate the life-giving fluid is defective in pulmonary consumption.

Importance of the Tuberculin Test

In mild cases of tubercular consumption, without ulceration or external communication with the tubercular consolidation of the lung, before the methods of examination that we possess demonstrate the presence of the bacillus tuberculosis, the tuberculin test (with a standard preparation) is of great importance; when properly used it practically leaves no doubt as to the presence or absence of tuberculosis in the individual tested.

In veterinary practice the tuberculin test is used by the government authorities: there is no recorded case where the test was used for diagnostic purposes, in proper doses, has given rise to any bad result following the injection. Although the test does not always reveal the localization or the extent of the tubercular inflammation, its use practically clears up all doubt as to the presence or absence of the infection. However, before resorting to the tuberculin test all other diagnostic means should be exhausted.

To realize an ideal in dealing with the dread white plague, we should advocate suitable employment to those able to work, preferably in the country; the consumptive individual under treatment should keep a diary, noting every detail of clinical history; dietary, hours in the open and occupation of time, etc.; this should be a reminder and serve to stimulate an unceasing vigilance in the observation of that care which only assures success.

For the information of white-plague exiles let us say, we do not believe that a suitable climatic change can always be advised in advance. The desideratum, mountain air, which ultimately becomes a bactericide as altitude is attained, is only possible for those in the incipient stages. Where the lungs have become organically destroyed by tubercular ulceration, in the face of profuse hemorrhages, great shortness of breath and emaciated feebleness, the vital energies of the sufferer would soon be blighted in that immutable life above the clouds. Some consumptives will do better upon the plains or the desert; others at an altitude of only a few thousand feet above sea-level; and yet others upon the seas.

When a nomadic man or woman, infected with tuberculosis, finds upon this earth a climate both compatible and congenial, where the destroying cough, the consuming hectic, the debilitating nightsweats, and the vain longing for food to nourish and to prolong life, when this nightmare of passing existence turns by defervescence into awakening health, there and then remain until God calls you to sleep. To return to the land of your birth and the home of your youth is suicide; it means to relapse and to die.

Parents, I entreat, send away your children who are weakly and lacking in physical development when there is a stigma of tuberculosis in the family, and plant them on a new soil to grow to a hardier adolescence. To condemn them to live to "repeat the same tale that's so oft been told," and to answer to their names among the victims of the great white plague, is to fail in your duty as parents, and for the public weal and the land's best endeavor. That is, if you can, if you are able.

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[The excellent and exhaustive bibliography appended by the authors the Editor was obliged to omit for lack of space.—ED.]

Laboratory Help in Tuberculosis

In treating tuberculosis we need all the resources that knowledge can give us. The laboratory can help by giving aids which may lead to success. The significance of some of these findings is pointed out

By HENRY R. HARROWER, M. D., Chicago, Illinois

SINCE the discovery of the tubercle bacillus by Koch and the simple methods of staining by Ziehl and Gabbet's method the examination of the sputum of suspected tuberculous cases has become a routine, and it is rare that a progressive practician attempts to treat a patient without having the laboratory report regarding the presence or absence of that bacillus. The staining of the sputum smear has become an absolutely essential procedure, and it is not necessary to add that it is both advisable and imperative in the investigation of any patient showing one or more of the cardinal symptoms of pulmonary tuberculosis. In addition to this, however, there are other important phases of the work done in the laboratory which unfortunately usually are neglected by most physicians and which, more particularly, I wish to refer to in this paper.

It is well understood that tuberculosis, whether localized in the lungs, a joint or some other part of the body, is not solely a

local disease. Rather, it is always associated with other abnormal conditions of the body, especially of metabolism, and for this reason it is absolutely essential that the general practician should make general and repeated use of the facilities of the scientific laboratory in his routine investigation and treatment of cases of this kind. Thus, the examination of the urine should be made early. Following this a careful examination should be made regularly every third or fourth weeks.

The first uranalysis will point out the general condition of the patient's metabolism, while the succeeding ones will enable one to follow carefully the case, as only in this way can a proper idea of the metabolic activities of the body be gained and appreciated. The physician, by giving his close attention to the findings, will then be in a position to proceed in accordance with the findings in the report.

The urinary examination should be complete and thorough and not be confined merely to the almost useless tests for albumin and sugar, which, though rarely resorted to, seem to be the customary scope of the average "urine examination." The advantage of such limited tests would be noted only in the few cases in which diabetes or Bright's disease were present; and even then the precipitation of a copper solution does not necessarily positively indicate diabetes, nor does the finding of albumin definitely prove the existence of Bright's disease. To be of real service the examination should at least include quantitative estimations of the normal elements eliminated in the urine, the most important figures of which are the amount, the urea-index, the solids, and the degree of acidity.

Lowered Urea Excretion—What It Means

The examination of a number of specimens of urine from tuberculous individuals shows that the amount of urea eliminated is almost always diminished, and in the majority of cases seriously so. This being true, it is quite easy to understand that in addition to fighting the localized infection, the patient has to contend with the disadvantages of a large amount of effete matter which is not being eliminated from his body in the proper amounts and which consequently either is circulating in the bloodstream or being stored up to produce trouble sooner or later. Dr. Foxhall, in an article recently published in *The Lancet*, states that if the average percentage of urea excreted is below 1.4 percent for ten or fifteen days it nearly always indicates definite renal damage—a condition which cannot be appreciated in time to render any service of value, unless the urine examination has been a routine diagnostic procedure.

The Value of the Acidity Tests

Another very important finding in the urine examination that has as yet not received the attention it deserves is the estimation of its acidity. A number of investigators have conclusively shown that an excessive degree of urinary acidity is a very important factor, since it is always associated with certain metabolic disturbances which have for their principal manifestation autointoxication, general malaise, indefinite aches and pains, a susceptibility to colds and various infections, and a general condition of lowered vitality. This higher urinary acidity probably is due to a condition of alkali-hunger, and evidenced by a marked systemic hyperacidity, or acidemia.

We have as yet to learn the exact *raison d'etre* for this condition, nor do we know positively the exact composition of the acid substances which may cause this abnormality, but it may be that they are in the same class with the products of proteid putrefaction, such as indican, which is an acid salt—potassium indoxyl-sulphonate. Indicanuria is frequently found associated with intestinal putrefaction, but may also be found in cases exhibiting proteid putrefaction, in other parts of the body, as for instance empyema, large tuberculous lesions, etc.

The examination of the urine for acidity should be carried out in the routine of every case. More particularly is this imperative in the investigation of those suffering from tuberculosis, for in addition to fighting the

local infection, the diminished degree of alkalinity of the blood renders that fluid less resistent, diminishes its capacity to carry oxygen, and generally devitalizes the cells that are nourished by it.

The employment of the litmus test is most unsatisfactory, and it should, therefore, be entirely discarded; neither is the examination for acidity of a single voiding of urine of much value, as the degree of urinary acidity varies greatly from time to time, depending upon the relation between the time of urination and alimentation, and also whether the specimen is passed in the evening or in the morning. For this reason care should be taken to instruct the patient as to how to obtain a *complete* 24-hour specimen of urine, and after the total quantity has been carefully noted a portion from the well-mixed fluid may be set aside for an early examination. Provided this is done, the normal degree of acidity should range between 30 and 40 degrees, and the number of acid-units (the relation between the degree of acidity and the amount of urine passed) should be about 40,000. This represents about 1300 Cc. or urine with an acidity of 30 degrees, or 1000 cubic centimeters of urine with an acidity of 40 degrees.

If the acidity proves to be very high—and this only too often is the case—it should be promptly reduced by the administration of suitable alkaline remedies. On the other hand, if the acidity is markedly diminished, the possibility of cystitis or other conditions usually associated with fermentation of the urine should be considered; or, if these are not the cause of the low degree of acidity, then the emunctories should be thoroughly stimulated in order that the acid substances which evidently are being stored up in the body may be neutralized in the cells or allowed to be eliminated in the usual way. It has been found that if conditions showing a diminished urinary acidity are allowed to persist for any length of time, it is quite frequently followed by certain "crises" which are not only decidedly inconvenient to the patient but often dangerous.

A good deal more stress should be laid upon the findings in the feces than now is the case. One of the frequent occurrences associated with pulmonary tuberculosis is tuberculosis of the intestine, or at least a markedly disturbed functional condition of this organ. An examination of the stools, in addition to showing the digestive capacity of the intestinal juices and also the absorption by the villi, gives one a very good idea of the extent of the putrefactive changes which are usually present, as well as whether infection of the bowels by an abnormal bacterial flora is present, and if so, to what extent.

Unfortunately the fecal analysis is but rarely made, except in large hospitals or institutions. Its routine use would be attended with more success in practice, as undoubtedly the information gained by such examination would give pointers of distinct value in the treatment of the abnormal local conditions so frequently associated with tuberculosis.

Attend to the Digestive Apparatus

One of the most important things that is necessary for the physician to do in the home treatment of tuberculosis is to give careful attention to the digestive apparatus, for the reason that one of the important factors in the treatment of tuberculosis seems to be the necessity for hyperalimentation. If the capacity of the stomach to digest food is diminished or impaired this matter should be appreciated at the earliest possible moment, in order that the proper steps may be taken to remedy this condition. Stomach analysis offers a solution to many of these difficulties and it is distinctly advised in every case of pulmonary tuberculosis associated with digestive disturbances, provided of course there is not severe asthenia and any of the few conditions which necessarily contraindicate the employment of the stomach-tube.

The examination, of the urine always, and of the feces and gastric contents when necessary, together of course with the frequent bacteriologic examination of the sputum, will do much to enable the physician to practise better medicine in general and to obtain better and more satisfactory results in the treatment of this disease in particular.

Tuberculosis: Some Therapeutic Suggestions

Some of the medicinal means that should be employed in the treatment of pulmonary tuberculosis, both with the purpose of directly attacking the disease and to modify its symptomatology

By WILLIAM F. WAUGH, A. M., M. D., Chicago, Illinois

THE dominant remedy for this malady should be one that destroys the causal bacillus in the tissues, or one that so increases the resistant powers of the organism as to render it capable of overcoming the invading hosts and ejecting them.

The only prominent agent for the accomplishment of the first object is sulphurous acid as presented in the sulphides of lime and arsenic. Whether the tubercle bacillus or any other organism can live in a human body saturated with these agents remains still to be demonstrated. Those who have most faithfully tried the method are most favorable to it—the opposition consists mainly of those who do not consider the matter worth trial.

The Uses of Nuclein and Tuberculin

The importance of Vaughan's discovery of nuclein has been obscured by the introduction of other remedies, whose advocates seem to have expended their ingenuity in devising novelties whose merit probably resides in their content of nuclein. But the fact of nuclein increasing the number and activity of the leukocytes remains undisputed; and we have practically accepted Metchnikoff's theory of the role played by these, as defenders of the body against intruding microogranisms—so why not nuclein in tuberculosis?

Tuberculin has apparently passed the usual phases—introduction, appropriation, crazy enthusiasm followed by corresponding depreciation; and, finally, during the last ten years there has been a steady growth of confidence in this remedy, when directed with a technic formed by experience. With the use of minute doses a new era of favor has come to the tuberculins, and they have more advocates today than for many years. The testimony in their favor is too strong to be disregarded.

Old readers of this journal may recollect that some years ago Shade warmly advocated calomel as a specific remedy for tuberculosis. He has never lost his faith though he was driven out of the field by the opposition aroused. Mercury has been revived by Wright in the form of hypodermic injections of the succinamide, and is being extensively tried now. Of the two methods Shade's has the incontestable advantage of providing for intestinal antisepsis, and that certainly is no small one. Of this more anon.

The other specific methods are all as yet *sub judice*, if we except the iodine-gold therapy of Shurly-Gibbes, which has been definitely abandoned by its introducers.

We come now to the variant treatment, where we find ourselves possessed of a wealth of resources:

Treatment of the Digestive Difficulties

First in importance we place the digestive difficulties—diarrhea, dyspepsia, indigestion, anorexia, and their far-reaching consequences in innutrition and debility. Frankly, we attribute all these to fecal toxemia. Clear out the bowels by calomel followed by salines, disinfect them by calcium sulphocarbolate, and by the results you may measure the influence of this one factor in the production of the symptoms. We expect as a rule to note that about one-third of the symptom-totality has subsided when this has been accomplished. We have learned that the diarrheas of the phthisical are rarely due to gastrointestinal tuberculosis, and that one or two degrees of the fever are attributable to fecal absorption as well as numerous other symptoms. The wolfish appetite that

replaces the former languor, nausea or anorexia is especially notable.

For the diarrhea we have a further remedy, said to be specific for the tuberculous form, in cotoin. In fact this has been held to be diagnostic—any diarrhea it relieves is tuberculous.

We place guaiacol here, believing the benefits following the use of this and creosote are really due to their action in disinfecting the bowels. At the time they were introduced and lauded as specifics for this disease the importance of intestinal antisepsis was unknown.

Remedies Useful for the Fever

The fever is exactly the type that is so favorably influenced by the Burggraevean triad—aconitine, digitalin and strychnine arsenate. This is of inestimable service here, enabling us to control the temperature at will. In some instances quinine may be added with benefit, more for its roborant action however than as an antipyretic. Guaiacol has a tremendous febrifuge action when rubbed into the skin, but this is attended with a perilous tendency to collapse. As to safety, efficacy and pleasant action, the triad leaves nothing to be desired. Were it only for its value in tubercular fevers it should give its deviser's name a place in medical history. Veratrine is out of place here, since the tendency to wasting forbids stimulation of elimination, beyond the proper clearing of the alimentary tract already discussed.

Hemorrhages and Nightsweats

Hemorrhages, if profuse, call for full doses of atropine hypodermically. The only form not controllable by this agent is that resulting from ulcerative erosion of a large artery—and what remedy could possibly control this? For hemoptysis—bloodspitting— hydrastine or hydrastinine is the remedy; slow as compared with atropine, but the effect is enduring. For the hemorrhagic tendency shown by the predisposed, epistaxis in childhood replaced by bronchial bleeding after puberty, the constitutional remedy is lime, in the form of the lactophosphate preferably.

Nightsweats follow hectic fever and subside when that is checked. While atropine promptly checks sweating, a better remedy is found in agaricin. Calcium lactophosphate in time imparts firmness to the cell-walls and renders them less likely to leak.

The Treatment of the Cough

Some cough is essential to keep the bronchial tract clear of secretions. This may be favored by steaming with vinegar fumes, and after the secretions are cleared away advantage may be taken of the opportunity to medicate the exposed surfaces by applying a spray of thymol iodide in oil. This is a useful remedy. It should be drawn well down by deep inspirations. It soothes the irritated mucosa and covers it with a protective layer of the oil, while the iodide possibly exerts a beneficial local action.

Other useful agents to soothe irritation here are zinc cyanide and codeine—the latter more effective than morphine and less likely to interfere with digestion, nutrition and elimination.

If the sensibility of the mucosa is low and secretions tend to collect and decompose, we have to make our patient cough harder, and for this we employ sanguinarine. But if the secretion is too free, as in bronchorrhea, we administer berberine to contract the relaxed tissues, calcium salts to strengthen the cell-walls, benzoic acid to restrain secretion, and may have to fall back on copaiba after all.

Fetid sputa, from decomposition or necrosis of tissue, demand the volatile oils, eucalyptus or the plebeian turpentine, internally and by spray. Emetine is frequently needed for intercurrent acute or subacute bronchitis.

Remedies for Wasting and Debility

For the wasting and debility we have largely provided in the attention given the alimentary canal and the fever; but somewhat remains as to direct treatment. The diet should be regulated by the patient's digestive capacity, the object being "scientific stuffing," the ingestion of all the food he can properly manage, of the most nutri-

tious forms. Milk, eggs, meats, the predigested foods, the raw-blood preparations, with lavish dosage of the artificial digestants, are to be employed with the most scrupulous study of the patient's digestion.

When iron is needed the arsenate is the most generally useful chalybeate. As a general tonic combination the arsenates of iron, strychnine and quinine with nuclein are frequently applicable; but it is advisable that the prescription should be made in all cases to suit the patient and the use of set formulas avoided. Codliver oil is best for the young, and I prefer to rub it into the skin daily, or to apply on a woolen shirt covered with oiled silk.

Recapitulation

Dominant:—Arsenic and calcium sulphides to destroy bacilli, enough to saturate the system, for two weeks.

Nuclein to reinforce leukocytes, 1-2 to 1 dram, of the solution, a day.

Tuberculin.

Variant:—Mercury as specific or as intestinal antiseptic.

Salines to empty bowels.

Calcium sulphocarbolate, grs. 20 to grs. 40 daily to disinfect them.

Cotoin for tubercular diarrhea, 1 to 5 milligrams hourly.

Aconitine 1-2 milligram, strychnine arsenate, 1-2 milligram, digitalin, a milligram, every one to four hours as needed for fever.

Quinine hydrochloride, a centigram every one to four hours when there is suppuration or hectic.

Atropine for free hemorrhages, half to one milligram hypodermically, repeated till face flushes.

Hydrastine for hemoptysis, a milligram every one to two hours, or a centigram three times a day.

Calcium lactophosphate for hemorrhagic tendency or habit, a centigram every waking hour.

Agaricin for night-sweats, 1-2 centigram every hour from 6 p. m. till bedtime.

Calcium as above to remedy fragility of cell-walls; give for six months or more.

Steam of hot vinegar to clear away secretions from bronchi; use nightly to secure quiet sleep.

Thymol iodide in oil; spray bronchi to soothe and protect against irritation, and disinfect; use daily.

Zinc cyanide, a milligram to a centigram to soothe excessive cough.

Codeine, a milligram every ten minutes dissolved on the tongue to soothe irritative cough.

Sanguinarine to stimulate sluggish sensation and cause cough to eject retained secretions; a milligram every hour till effect.

Berberine to contract relaxed tissues in bronchorrhea and restrain too free secretions; a centigram seven times a day.

Calcium lactophosphate to restrain colliquative bronchorrhea, half a Gram a day, in divided doses.

Benzoic acid to restrain redundant secretion; a centigram every waking hour.

Eucalyptol, menthol or turpentine for fetid sputa, decomposition of sputa or necrosis, half to one decigram every one or two hours.

Iron arsenate for anemia, bronchorrhea or hectic; a milligram every hour or two.

Strychnine arsenate for low vitality and sluggish function, 1-2 milligram every hour or two.

Quinine arsenate for debility, hectic, suppuration, periodicity of fever; a milligram to a centigram every hour or two.

Nuclein for debility, five to ten drops every hour or two.

Codliver oil for debility, emaciation, the tubercular diathesis.

Diet, "scientific stuffing."

Electricity in Tuberculosis

Relative value of x-ray, high-frequency currents, ozone, etc. Combination with other forms of treatment advocated, as they are perfectly compatible, and patients' chances for recovery are greatly increased

By NOBLE M. EBERHART, A. M., M. S., M. D., Chicago, Illinois

Head of the Department of Electro-Therapy, Chicago College of Medicine and Surgery; Professor of High-frequency and Vibration, Illinois School of Electro-Therapeutics; Attending Surgeon Frances Willard Hospital, etc.

THE usefulness of electrotherapeutic measures in tuberculosis has been established by a mass of clinical evidence. Under this term (electrotherapeutic) I include the x-ray, high-frequency currents, the Finsen light and other appliances where electricity is necessary to the production of the therapeutic agent.

X-ray.—The principal value of the x-ray in treatment is in localized lesions, such as tuberculosis of glands, joints, testicle, etc., or in lupus. Its use in pulmonary tuberculosis has been practically discontinued as other measures less dangerous have proved more efficacious.

It is of the highest importance to the physician, from a diagnostic standpoint, in showing the presence and extent of tubercular processes.

In lupus, if the physician has both the x-ray and the Finsen light, the latter is preferable, but statistics show the x-ray to have proven curative in 80 percent of the cases, and therefore practically equal to the light-treatment.

In tubercular glands 60 percent yield to the x-ray alone. Cases in which the glands are broken down should be operated on *first*, then treated with the x-ray. Other cases should be rayed first, and operated upon later if the disease is spreading. To operate and not follow with the ray is as bad as to stick to the ray, no matter what the condition of the glands. *Surgery and the x-ray are valuable adjuncts to one another and not competitors.*

The percentages of cures or arrests that may be anticipated in other forms of tuberculosis are as follows:

Tuberculosis of joints .....about 40 percent
Tuberculosis of long and flat bones .....about 35 percent
Tuberculosis of testicle .....about 50 percent
Tuberculosis of tendon sheaths .....about 70 percent
Tuberculosis of peritoneum ..about 40 percent

The percentages depend largely upon the individual ability of the operator.

TABLE SHOWING RESULTS OF TREATMENT

Tuberculosis of	Vacuum of Tube	Distance of Tube	Length of Treatment	Treatments Per Week
Lymphatic glands	Low or medium	4 to 8 inches	7 minutes	3
Joints	Medium	10 "	7 to 10 "	3
Long and flat bones	Medium or high	10 to 20 "	7 to 10 "	3
Tendon sheaths	Low or medium	4 to 8 "	5 to 7 "	3
Peritoneum	High	20 "	7 to 10 "	3
Testicle	Medium	10 "	7 "	3
Lungs	High	20 "	5 to 10 "	3
Skin (Lupus)	Low	4 to 6 "	7 to 10 "	3

The technic of x-ray treatment is summarized in the foregoing table.

High-Frequency Currents.—In all superficial forms of tuberculosis the spark from the glass vacuum tube attached to a Tesla coil or an Oudin resonator should be applied from 2 to 7 minutes after x-ray exposures or may be used independently.

In pulmonary tuberculosis remarkable results have followed the use of the high-frequency current by autocondensation. The form employed is the D'Arsonval current. The general method is to give a 10-minute treatment every day, with 150 to 500 milliamperes of current in the patient's circuit.

Caution. — Autocondensation increases bodily temperature, and if the latter is high, say 103°F. or over, the first treatment should last only *five minutes*, and another one should not be given until the reaction from the first subsides, which will be in from three to five days. After a few repetitions daily treatments may be resorted to. This treatment increases the symptoms for two or three weeks, after which they show marked and steady improvement in a majority of cases.

Laboratory tests in conjunction with the treatment prove its efficiency. The results are so positive in such a large percentage of the cases that it should be employed wherever possible.

Finsen Light.—This agent is superior to other forms of electrical treatment in lupus; of no value in other than superficial lesions.

Ozone Inhalations.—Laboratory examinations show ozone to be markedly beneficial in pulmonary tuberculosis. It may be given by daily inhalations at the physician's office, but the ideal manner is by an ozone generator that may be kept running constantly in the patient's room, thus continually charging the air respired with an increased amount of ozone.

Recapitulation.—In tuberculosis of glands the x-ray in conjunction with surgery is the choice of methods.

In lupus apply either the Finsen light or the x-ray.

In pulmonary cases always use autocondensation and ozone inhalations. Neither of these measures interferes with other established modes, whether medical or hygienic, and the patient is given two additional chances for his life. Facts are stubborn things and an investigation of clinical results with autocondensation and ozone will convince any fair-minded man of their merit.

Tuberculin in the Diagnosis and Treatment of Tuberculosis

The detection and treatment of tuberculosis in its very beginning is of the highest importance. The author demonstrates the positive reliability of the tuberculin test for this purpose and describes methods of its employment

By. W. VON RIEDL, M. D., Chicago, Illinois

WE know it to be a fact that the mortality from tuberculosis has been diminishing within the last ten years. From English statistics we learn that the mortality from tuberculosis has declined from 35 deaths per 10,000 inhabitants in the year 1865 to only 18 deaths in 1905, and this in spite of the unhealthy climatic conditions of that country and the great increase of traffic and growth of the industries. So also Germany records a decrease of deaths from this disease from 35 deaths per 10,000 inhabitants in 1875 to 15 deaths in the year 1896.

This change may be the result in part of improved sanitation in those countries as well as the care taken in disposing of the tubercular sputum. This I do believe to be a fact; nevertheless I cannot agree with Cornet that tubercular sputum is the only means of conveying infection, for I positively *know* that there are other ways of spreading tubercular infection. If Cornet's opinion is accepted as positive and final, then there should be observed a diminution of the mortality from tuberculosis. However, we know through pathological anatomy that more than 90 percent of all human beings examined *post mortem* show tubercular change while, as a matter of fact, only about 20 percent die of tuberculosis. A diminution of the infection of mankind at large can not be

proven. This fact has been fully established through tuberculin tests.

Tubercular infections are constantly forming small tubercular areas in certain glands. There the bacilli may be destroyed or they may remain in a latent stage in a low state of vitality. It was formerly believed that these latent stages in the glands (which may last for years) represent a period of incubation, leading to a general infection, or else they may remain in the latent condition. Clinical tuberculosis will follow unhealthy conditions, poor nourishment, improper habits and surroundings or devitalizing diseases. In such cases we can be of great help to the sufferer, and without doubt good work is being done in this direction.

The public boards of health cannot prove a diminution in the spread of tuberculosis, but they certainly are checking it through the enforcement of better sanitary measures in the home, the factory, of traffic and food supplies. If all interested can continue to work together effectually and peaceably, the ravages of this plague may yet be still more reduced, but even then a limit will eventually be reached. We may strive and labor for ideal conditions although they can never be attained.

We should be bound to combat all possible forms of tubercular infection, which means that we must fight the bacillus of tuberculosis wherever we meet it; but an absurd fear of infection will be of little help—in fact, it will be found to be a great impediment to progress, leading the patient to conceal his disease, thereby the more endangering those with whom he comes in contact.

Tuberculosis will continue to be a plague for some time to come, and so its close study should be one of the highest ideals of the profession. An early and positive diagnosis is of the utmost importance theoretically as well as practically, and in order to make this possible tuberculin should be used as a reagent.

The Tuberculin Test.—Tuberculin is a very sensitive reagent. It will show the slightest tubercular change in the human system. Until a short time ago we knew only of the subcutaneous tubercular tests of Robert Koch, which depend upon the injection of small doses of tuberculin, this causing irritation of any tuberculosis-area present and also fever. This reaction will be positive even if the changes are extremely small. Thus, for instance, an Austrian physician observed the reaction with tuberculin in more than 60 percent of apparently perfectly well soldiers.

Wolff-Eisner, simultaneous with Calmette, showed that the installation of the dilute solution of tuberculin into the eye of a tuberculous patient was followed in a few hours by a local reaction characterized by a congestion of the palpebral conjunctiva and caruncle, with a more or less abundant serofibrinous exudate which tended to accumulate in the inferior cul-de-sac. The reaction gives a positive diagnosis of the existence of the tuberculous lesion.

Von Pirquet's Cutaneous Reaction.—Von Pirquet pointed out the fact that upon scarifying the skin of a tuberculous subject and applying a solution of tuberculin there appears an area varying from a local hyperemia to an intensely inflammatory reaction. The reaction is not attended with fever, malaise or any other general symptoms.

The Technic to be employed is practically the same as that used in vaccination against smallpox. Only the most superficial layers of the epithelium need be abraded, as it is merely necessary to open the superficial lymph-channels, and it is not desirable to draw blood.

The value of the Von Pirquet reaction is variously estimated. It is extremely delicate, and on that account it will show a reaction in individuals who otherwise appear to be practically free from tuberculosis. However, as pointed out by Hamburger, it is quite difficult to find an adult free from tuberculosis, which explains the great frequency of Von Pirquet's reaction in adults.

The Moro Test.—A tubercular ointment is prepared by a combination of equal parts of old tuberculin and anhydrous lanolin. The point of application is over the skin of the abdomen or breast. The ointment is

energetically rubbed into the skin, and the positive evidence of tuberculosis is an eruption of a granular or a papular efflorescence at the point of application. The ointment test is not as sensitive as the cutaneous one, but does run parallel with the Von Pirquet method. It only very seldom shows latent disease-areas and gives but very little reaction in far-advanced cases.

I have used the ointment test with disadvantage in scrofulous children, getting a positive reaction just the same as in the Von Pirquet method in cases of purpura, epilepsy, chorea, herpes zoster, rheumatism and all rheumatic affections.

Emmerich and Schlossmann have published an interesting report concerning the cutaneous and percutaneous reaction in children.

Therapeutic Use of Tuberculin.—At the present time, I am happy to say, a remarkable revival of interest and confidence in the use of tuberculin as a curative agent in tuberculosis is noticeable.

Koch states: "I maintain that its efficacy as a cure is completely proved provided its application be restricted to still-curable cases, those not too far advanced and not complicated by streptococci, staphylococci, pneumococci, the influenza bacillus, etc.

The best way of guarding against the misapplication of tuberculin is to use it in cases in which the temperature of the body does not exceed 37°C.

That tuberculin exercises an exceedingly favorable influence in all such cases, and even completely cures them, as a rule, is a fact of which I have repeatedly convinced myself; and so have numerous other medical men, who have studied the therapeutic value of tuberculin during a term of years. Under our present knowledge of tuberculosis specific treatment of this malady is practicable.

The tubercle bacilli, living or dead, are able, by their toxins, to produce in the organism specific protective bodies: antitoxins, bacteriologic substances, and agglutinins. These protective bodies are found in the blood-serum, in the leukocytes of specific inflammations, and in the ovum and milk. The rectification of a tubercular process depends upon the production of protective bodies by a strong stimulation. The production of these agencies can be brought about by the introduction of tuberculin into the tubercular patient. The healing of tuberculosis in its manner corresponds to the spontaneous healing in which the patient himself carries out the autoserum therapy in that he produces the specific protective bodies from the tubercle toxins elaborated in his own lesions.

My favorable impression of the influence of tuberculin has been principally formed by noticing how rarely the disease seemed to progress by the usual exacerbations and relapses in patients who were tolerating progressively increasing doses of tuberculin well, and in watching chronic cases where the patients were running a slow but steadily downward course, in spite of the climate and open-air treatment administered, but who derived marked benefit and even gradually returned to apparent health after a full course of injections. It is especially in cases in which no marked intolerance to the injections has been apparent that one observes all the evidences of the chronic toxemia, from which the patient suffers, slowly disappear.

I may add that my belief in tuberculin immunization as favorably influencing the course of chronic tuberculosis rests on no stronger foundation than merely a strong clinical impression derived from actual experience.

Tuberculin Not a Specific.—That tuberculin is not the specific it was at first thought to be has been amply demonstrated by some bitter experience of the past. We have learned the dangers of the tuberculin treatment and its limitations. We have, however, also in recent years learned something about the complex defensive resources of the living organism which tend to the production of immunity, and how to call them into action, though we are evidently as yet only on the threshold of the knowledge of immunization by vaccines in the treatment of chronic infections. Everything we know, however, points to immunization and toward which our efforts should be directed.

We have yet much to learn about tuberculin treatment, but even in the present state of our knowledge I am inclined to think that the production of tuberculin immunity by the mild clinical method is capable of favorably influencing the course of chronic tuberculosis, of prolonging life, and in many cases of aborting a commencing attack or extinguishing the smouldering fires of a chronic infection.

Tuberculosis in Domestic Animals

The writer shows that an alarming increase in tuberculosis in cattle and hogs has occurred within recent years. This condition is a menace to society, and should be controlled by vigorous measures, which are outlined in this article

By W. G. CLARK, M. D. C., Marinette, Wisconsin

THIS is a subject about which there is no danger of any of us knowing too much, but one of vital importance to every man, woman and child in the community, from the cradle to the grave.

Every human and animal tissue is liable to be invaded by its products, and its victims in the human family annually number about 14 percent of the total deaths the world over, and from statistics gathered at postmortems, it is estimated that about 25 percent of the human family are infected with the disease in its various forms.

What then is tuberculosis? It is the general name given a class of diseases in animals, of which consumption in the human family is a type, and has been known for many centuries under many different names.

The great Hippocrates, who was born about 470 B. C., and who is justly styled the "father of medicine," recognized this disease, and gave such a minute and accurate description of the symptoms that even the most cursory reader cannot fail to recognize his vivid picture. He also stated that cattle, sheep and swine were very susceptible to tuberculosis, but argued that man was more liable to its attacks.

And from that remote date down to the present time a large amount of medical literature has been devoted to its consideration. In 1865 Villemin showed that the disease could be communicated to healthy animals by inoculation, thereby proving the contagious nature of the disease.

In 1887 Robert Koch completed the long search by finding the germ of tuberculosis and proving by experimental inoculations upon various animals with cultures that this specific bacillus was the cause of tuberculosis. Since this time there has been a great advance in the treatment of the disease in the human, and according to statistics it has lessened materially during the last fifteen years.

An Alarming Increase in Tuberculous Animals

Reports from the various meat-packing centers fail to show the same encouraging condition regarding cattle and hogs, and a review of the statistics compiled by the Bureau of Animal Industry show an alarming increase during the last few years.

For the fiscal year of 1903 an average case of tuberculosis was found in every 549 beef carcasses inspected. In 1904 one in every 492; in 1905 one in every 442; in 1906 one in every 390; for the months of January, February and March, 1907, one in every 230; for the months of April, May and June, 1907, one in every 185.

During the fiscal years of 1898 and 1899 there were slaughtered under government inspection 44,941,779 hogs, of which 4021 were condemned for tuberculosis. That is, an average of one case of tuberculosis was found in every 11,152 hog carcasses inspected.

In the fiscal year of 1900 there were inspected at slaughter 23,428,996 hogs, of

which 4379 were condemned for tuberculosis, or one in about every 5350, which is an increase of over 100 percent over the two preceeding years.

The disease has shown a very rapid increase from that time. In 1903 one hog in every 1076 was condemned for tuberculosis. At the present time, from statistics gathered by the Bureau of Animal Industry, it is estimated that 1.43 percent of all the hogs slaughtered under federal inspection are affected with tuberculosis. Seventy-four percent were passed after trimming, 12 1-2 percent were lard-tanked after trimming and 13 1-2 percent were tanked.*

This disease in hogs, until recent years, has been looked upon as of uncommon occurrence, and only of importance from a meat-inspection standpoint. Today there is probably no disease of hogs, not even excepting hog-cholera, which is causing heavier losses to the hog-raiser than tuberculosis, and it is also the cause of the greatest loss to the packers.

Reports from European abattoirs show that tuberculosis is far more widely spread among their hogs than ours, some of the returns showing as high as 5.5 to 7.5 percent.

The Effort to Locate Infected Farms

The Bureau of Animal Industry is at present endeavoring to locate the infected farms, or at least the infected localities, and to ascertain the direct cause of its spread in these districts.

Owing to the number of hands through which hogs go before reaching the packing houses, this is not an easy proposition, but it can and is being accomplished.

Already, through cooperation with the state authorities, a large number of infected farms have been definitely located, the conditions on the farms have been investigated, the source of the disease determined, and the methods for its suppression recommended. In this state (Wisconsin) the bureau and state officials have been working with these ends in view. When hogs have been found tubercular, and the farm from which they come is located, the state veterinarian is notified, who is empowered by law to quarantine any farm when he suspects the presence of a contagious disease.

He then applies the tuberculin test to the cattle on the farm and otherwise looks for the source of the infection. This frequently results in finding the cattle tuberculous. Similar cooperation has been taken up with Nebraska, Iowa and Minnesota.

The Bureau of Animal Industry is also using the same method in regard to tuberculous cattle slaughtered at establishments where inspection is maintained, and in such instances to inform the state authorities of the facts.

When a system of cooperation can be effected between the state and federal governments providing for a general plan of tagging all dairy cows shipped for slaughter, then the work of locating these disease-centers will be greatly simplified.

The Value of the Tuberculin Test

Some years ago the Bureau of Animal Industry, in order to protect as far as possible the breeders of cattle from the dangers of this disease, issued an order requiring all cattle imported for breeding purposes to be subjected to the tuberculin test.

The wisdom of this step can be shown by merely stating that 19.7 percent of the cattle tested since that time have reacted, and from several foreign herds no cattle are even considered for testing on account of the general infection existing in those herds. The agitation against the milk of tuberculous cows as human food has had the effect of causing many herds to be examined, with astonishing results not only to the owners but to the officials themselves.

There has been considerable incredulity with reference to the tuberculin test, particularly among those opposed to the movement to stamp out the disease, but the statements of such persons should not be given very serious consideration except as they may be the means of prejudicing the uninformed against the test. There is no more reliable diagnostic agent than properly pre-

*"After trimming" means that the tuberculous matter was trimmed out and the rest used for food; "lard-tanked", that the lard was saved for food; "tanked", that no part of the animal was saved for food.

pared tuberculin in the hands of a careful observer.* The reports received from all parts of the United States of tests made by competent veterinarians absolutely confirm this statement.

Frequently affected animals give little or no reaction, but in these cases any veterinarian of average ability should be able to diagnose the disease by physical examination alone, as in nearly all such cases the disease has become so generalized that a mistake as to its true nature should not be possible.

It is understood that the test should be administered by a qualified veterinarian, and that in addition to the test the cows should be examined physically.

Without considering the matter as a public-health question, but looking at it entirely from an economic standpoint and as a business proposition, live-stock raisers cannot afford to have this disease in their herds. As soon as this fact is fully understood by stock-raisers much of the opposition raised against the sale of livestock subject to inspection will disappear, for it will be worth the price of several condemned animals for the owner of a valuable herd to know as soon as possible when the disease exists in his herd, as the longer he delays in taking steps to prevent its spread, the greater will be his loss eventually.

Tuberculosis in Hogs

This disease in hogs has always been found closely associated with tuberculosis in cattle, and this is not strange, considering the close relations of these two domestic animals on the average farm.

As a result of numerous experiments conducted on hogs it has been quite conclusively proved that tuberculosis in hogs is an ingested disease and that the tubercle bacilli are easily taken in with the food.

Numerous experiments have been conducted by various scientists in many countries which show a great unamimity relative to the ease with which hogs may contract tuberculosis from being fed on the milk of tuberculous cows.

Experiments conducted by the Bureau of Animal Industry have shown that when hogs were fed on tuberculous milk for only 3 days the postmortem examination held 107 days, later showed that 83.3 percent of the hogs had become tubercular. Another lot received tubercular milk for 30 days and were allowed to live for 50 days after, and 100 percent of these animals had developed generalized tuberculosis.

Another fruitful source of infection is to be found in the feces of tuberculous cattle. It is a common practice to allow hogs to accompany cattle about the pasture and barnyard, and while doing this they thoroughly work over the feces in search of portions of food passing undigested through the bovine alimentary canal, and wherever there are tubercular cattle in the herd the danger of passing the infection on to the hogs becomes very great.

In a series of investigations carried on by the Bureau of Animal Industry it was found that the feces of tubercular cattle were often loaded with tubercular bacilli.

To test their virulence, tuberculin-tested hogs were placed in pens where a few shovelfuls of such feces were thrown daily while the hogs were fed other food free from tubercular bacilli. The result was the infection of 25 percent of the first lot of hogs and 100 percent of the second lot that were exposed.

In this experiment the tuberculous condition of the cattle was only shown by the tuberculin test, as they were apparently healthy and having no visible indications of the disease.

A somewhat similar experiment was performed by exposing tuberculin-tested hogs solely to the feces of healthy cattle that were swallowing small quantities of tubercular bacilli in their drinking water. The exposure lasted 81 days, with the result that 75 percent of the first lot and 100 percent of the second lot of hogs contracted the disease.

Another fruitful source of the disease is found in allowing hogs to feed on slaughter-

*Reports of tuberculin tests made in the 15 years from 1893 to 1908 by federal, state and other officers, show that out of 24,784 reacting cattle slaughtered, lesions of tuberculosis were found in 24,387, a percentage of 98.39.—*U. S. Bureau of Animal Industry Report.*

house offal, and carcasses of cattle infected with the disease.

During the year just passed this disease has cost the packers under Federal inspection over $3,000,000 for animals condemned, and sooner or later the packers and slaughterers are going to buy hogs and dairy cattle subject to postmortem inspection, and the stock owner who continues to fatten his hogs as of old, will be made to sustain the losses from his lack of knowledge, skepticism or indifference, and the intelligent stock-owner who produces healthy animals, by carrying out known and approved methods of prevention will not be required to bear a portion of the burden of the careless or ignorant who neglect these precautions.

The Duty of the Stock-Raiser

At the present time this portion of the State is comparatively free from this disease and it behooves every stock-raiser to guard against its introduction to his herd and to assure himself that his stock on hand is free from this scourge.

If any animal dying or slaughtered on the farm presents any suspicious lesions the affected portion should be taken to a veterinarian or physician for inspection, and if found tubercular, the herd should be subjected to the tuberculin test and all diseased animals slaughtered immediately and the premises thoroughly disinfected. If the above method were followed by every stock-owner, the disease could be practically eradicated, and it would mean the saving of thousands of dollars to the stock-raisers of this country in the years to come. I am fully convinced that the time is coming when we shall be face to face with the problem of eradicating this plague from the herds of the country.

It means the expenditure of millions of dollars of the public money and great financial loss to individuals. The great agitation that has been going on for some time has brought the subject before the mind of the public in a more direct manner than ever before, and it occupies an important position in the minds of all reasoning people.

In an important movement of this sort it is imperative that it be sustained by the indorsement of the public, for without such indorsement, those who are selfishly interested generally place so many obstacles in the way, as to successfully frustrate any effort in that direction and the principal object in preparing this paper has been to place this question before you in such a manner that you may become familiar with the subject and understand the importance of eradication both from an economic and a public-health standpoint.

Do We Use Obstetrical Forceps Too Often?

The writer of this paper says that we do not, and gives some excellent reasons for this opinion. A clear and practical presentation of an important subject

By IRA C. YOUNG, M. D., St. Louis, Missouri

WITHIN the last year I have read in the journals several papers claiming obstetrical forceps are being employed altogether too often. I do not believe this to be true. On the contrary, I believe the profession as a whole does not use the forceps often enough, and hence write this in the hope that the "family" will express such opinions as they may have on the subject, based upon their observations and experiences.

Nothing is as valuable as honest, frank expression of opinion based upon experience; and we can benefit each other in our work if we will not hesitate to relate our belief, founded upon our daily work, with-

out regard to who may differ with us. It is in this spirit that I take up the present subject.

I attend on an average about fifty primiparas a year in confinement, and have done so for several years. As a result of that experience I find myself using forceps more and more often, because I have observed that by so doing I can save my patients from one to three or more hours of suffering; there is less shock; I have fewer still-births; none of the accidents due to prolonged hard labor; and a more rapid recovery of the mother. I do not have lacerations of the perineum any oftener now than I did when I only rarely employed forceps; neither do I find the lacerations any more extensive.

How Much Force I Use in Traction

I do not pull continuously, with all the strength I have, from the time my forceps are adjusted until the head is delivered, as I have seen some do; rather, I make gentle traction, applying the force in the proper direction, *during uterine contractions only*, simply to aid the natural forces.

I use a Hodge forceps, with a screw-lock, which prevents too much compression of the head of the child, from squeezing the handles of the forceps together, and have never seen or heard of a case of epilepsy, or any other affection of the child, due to pressure of forceps, in any of my cases.

As to the position of the patient during forceps delivery, I think that is largely, if not entirely, a matter of individual experience. I place my patients in dorsal position, and prefer it to the lateral, because being accustomed to it I can do better work for my patient, and with more ease to myself. I know one can do just as aseptic work with the patient in one position as in the other, in so far as that in itself is concerned. Of course an operator will do better work in every way when using a position to which he is accustomed than with one new to him, because in the latter case he will be awkward, no matter how much general skill he may possess.

One other point, with reference to the position of the patient when making a forceps delivery, is that in this country women have been educated to be delivered in the dorsal position; they look upon it as the natural and proper position for delivery; and they will often blame the operator for unavoidable accidents in delivery, charging them to the position they were kept in, when some other than the dorsal was adopted.

Lacerations Will Occur in Every Practice

I do not want to be understood as saying that I do not have lacerations of the perineum in forceps deliveries. I do have them, and have them frequently; but not any more often or any more extensive with the forceps than without them.

My experience and observation is that from 96 to 98 percent of all primiparas delivered will have more or less extensive laceration of the perineum, no matter what methods are employed to prevent it or whether forceps are used or not. And whenever I hear a doctor say he never has a laceration of the perineum, I know he either does no obstetrics; does not look to see whether he has a laceration or not; does not know a laceration when he sees one; or he willfully and deliberately lies.

I believe the matter of using forceps in labor is one of the most important problems before the profession; and I am sure scores of mothers suffer ill after-effects, because forceps were not used, to one who suffers afterward because of them, when properly used.

Hundreds of children have died in cases in which forceps were not used who might have been saved had forceps been used.

The sooner we forget the old teaching to "always leave obstetrical forceps at home when going to a case of labor, for fear they may be used if taken along, in a case which nature would deliver," and learn to use forceps aseptically and skilfully, the better for all parties concerned.

It would be just as sensible for a surgeon to go to make an appendectomy without a knife, scissors, needles, and suture material, as for an obstetrician to go to attend a primipara without a pair of obstetrical forceps.

SURGICAL AND GYNECOLOGICAL NOTES

BY EMORY LANPHEAR, M. D., LL. D.

HYSTERIA AND PELVIC DISEASE

For a time the neurologists persuaded the medical profession to believe that the ancients were entirely wrong in naming certain nervous symptoms "hysteria" because of their fancied origin in some disease of the womb (*hystera*, Greek equivalent of Latin *uterus*), and that the trouble is solely a disorder of the nervous system. For, said they, do we not find "hysteria" in men? Now, however, pathologists are demonstrating that the symptom-group denominated hysteria often does have a physical basis in gross pelvic disease; and the gynecologists are proving that intelligent removal of the pathological cause (not mere indiscriminate spaying) in many instances cures the nervous disturbance. This is particularly applicable to gonorrheal infections of the pelvis. Much of hysteria, however, depends upon either (a) ungratified sexual hunger or (b) means for the relief of that desire: masturbation, either physical or mental —the latter being worse in its effects upon the nervous system.

NEURASTHENIA AND PELVIC DISEASE

Severe neurasthenia may originate in neglected pelvic disease; so that, ultimately, the patient may complain of pains—generally called "reflex"—in any part of the body. Sometimes this neurasthenia is so thoroughly fixed that operative relief of the primary pelvic trouble may not cure the patient. This should be carefully explained to the husband or other responsible party, but not explicitly to the patient herself—it should suffice to tell her that some months may elapse before complete restoration to normal health, during which time she must take medicine, etc. To go fully into details with the patient might result in harm: (1) she might be so discouraged as to refuse to submit to highly necessary reparative surgery or (2) the information might have such depressing effect upon her mind that much of the possible benefit of operation would be lost. With the neurasthenic positive and repeated assurance (suggestion) of perfect health to be attained is of utmost importance. Never theless convalescence is generally tedious and after-treatment necessarily prolonged. Patience, encouragement, a little medicine, much water, plenty of sleep and generous diet do more toward a cure than the most perfect surgical "cure" of pelvic lesions. Both forms of treatment must be employed —not one to the exclusion of the other.

INJECTION FOR INOPERABLE CANCER

Whenever cancer is so far advanced as to permit of no curative operation much good may be accomplished by hypodermatic injection of a solution of potassium and sodium hypochlorites. Injection is not to be made into the malignant tissue but into shoulder or buttock so as to enter the tissues near some great lymphatic glands. The solution consists of 5 Grams of potassium hydroxide, 4 Grams of sodium hydroxide, and 1 liter of distilled water passed through washed chlorine gas. Of this 1.5 to 2 Cc. (20 to 30 drops) are to be injected daily. Often life may be prolonged for months—possibly years—by this method of treatment.

CURABILITY OF CANCER

Every doctor should appoint himself a committee of one to tell the people throughout the whole world that cancer can be cured. No less important is the instruction to consult a competent doctor on any suspicion of cancer, because in early recognition and prompt extirpation lies safety. Death following late operations gives the popular impression that cancer cannot be

cured. In great part doctors are to blame for the high mortality in cancer, by failure to explain these facts to their patrons, and to insist upon early excision before glandular enlargement, sepsis or metastasis make a cure questionable or impossible.

The mortality from cancer at present is appalling: One man in every eleven past his thirty-fifth year will die of cancer; and one woman in every eight! If doctors would explain to every patient with a suspicious growth that it may be removed without suffering and practically without danger, whereas a few months' delay may mean death, the present prejudice against operative measures would soon disappear and the death-rate diminish one-half.

TYPHOID BACILLI IN GALL-BLADDER

Pathologists have demonstrated that the specific germs of typhoid fever may become inhabitants of the gall-bladder, and thus serve as the source of the spread of this disease many months, possibly years, after the subsidence of all intestinal trouble. There, later, they may so injure the mucous coat of the gall-bladder or so affect the bile or mucus as to give rise to cholecystitis or to the formation of gallstones. A majority of patients suffering from gallstone disease will be found to have been affected by typhoid fever at some previous period.

PENDULOUS BREASTS

Some women develop pendulous breasts as they become advanced in age; and sometimes earlier if many children have been borne. When mechanical supports (corsets and the like) do not keep the mammæ up to the proper place one may excise a large ellipse of skin and subcutaneous cellular tissue at the upper periphery of each breast down to the fascia of the pectoralis major. Then split the fiber of the pectoralis major and minor, elevate the periosteum of the third rib, pass three strong sutures of chromic catgut deep through the gland, and fasten them to the periosteal flap. Finally close the external wound with sutures. It is perhaps unnecessary to add that all this should be done without touching with fingers (rubber gloves and strictest asepsis being indispensable) as suppuration will ruin the breasts.

HYOSCINE-MORPHINE-CHLOROFORM ANESTHESIA

Dr. H. MacNaughton Jones, the well-known English authority on diseases of women, has recorded a number of difficult and serious operations performed under the hyoscine-morphine-chloroform method of anesthesia. He reports that invariably the patient passes very quietly into a narcosis which resembles a placid sleep and during the operation the patient remains in a most satisfactory condition with practically no chloroform. There was no fear concerning the low vitality and power to resist shock of his patients and there were no disagreeable postoperative effects. In the majority of cases he administered 1-6 gr. morphine and 1-100 gr. hyoscine on the night before the operation. After emptying the bowel, a second injection was administered, about one hour before the operation. In all cases the operations were performed under chloroform very little of which is required to produce the necessary anesthesia.

METATARSALGIA

This painful affection of the foot, often spoken of as "Morton's disease of the foot" or "Morton's disease," is fortunately of comparative rarity, for patients sometimes suffer intensely for years before the exact condition is recognized and corrected; the chief source of error in diagnosis being that the most severe pain is often described as being felt just below the knee, though occasionally it is referred to the hip, the foot itself attracting but little attention. Sharp pressure on the metatarsal bone of the "ring"-toe gives such excruciating pain, the diagnosis can be instantly made in every suspicious case.

A shoe so constructed as to give an unusual degree of support to the transverse arch

of the foot is sometimes all that will be required to give perfect relief where massage, electricity, baths, etc., have been tried in vain. Others require a specially constructed support made by an experienced orthopedist. In the worst cases excision of the head of the bone is necessary to effect a cure. In clean hands it is not dangerous nor painful; nor does it seriously weaken the foot.

CYSTS IN THE CANAL OF NUCK

Hydrocele of the canal of Nuck may follow a blow or strain and closely resemble hernia on superficial examination. Most cases of socalled cysts are probably due to thrombosis of the vein, with effusion into nonobliterated portions of the vaginal peritoneal process. Removal of the "sac," without drainage if possible, should be done early. Primary union is desirable on account of the danger of a secondary hernia from weakness of the canal following healing by granulation. Suppuration in regions liable to hernia is always to be feared for this reason.

SURGICAL CURE OF EXOPHTHALMIC GOITER

There seems to be a general feeling that removal of the thyroid in this disease is, first, attended by great danger and, second, often is not curative. Neither is true of work in the hands of experienced men: the mortality, even including the desperate cases, is not above 5 percent, and only less than 10 percent remain uncured.

But the surgeon should not be lead by these figures to promise a cure, for while a large proportion may be said to be "cured" (that is, there is a subsidence of the tachycardia, an abolition of the termor, and even a disappearance of the exophthalmos) many of the patients still remain more or less invalids; all that can be promised to follow operation is relief from the most distressing symptoms. If absolute cure be secured, so much the better. Much depends upon proper selection of the cases; good judgment must be exercised or great disappointment will result.

Two groups, representing the extremes of the disease, should be regarded as beyond the pale of surgical cure: (1) Those with furious cardiac action, dilated heart and suspected degeneration of the myocardium, and (2) the very mild cases which, after long observation, show no tendency to become aggravated or which readily yield to proper regimen and judicious internal use of quinine hydrobromide.

Operation is full of danger, even though the case otherwise appears favorable to surgical treatment, when the blood pressure is decidedly below normal—failure of compensation. Likewise the operation is hazardous when the degree of thyroid intoxication is great; if examination of the blood shows no increase in the lymphocytes the patient must be put in bed for weeks if necessary to secure the best possible condition favorable to success. With careful preparatory treatment and judicious selection of cases, then, the operative treatment of this disease may be said to be comparatively safe and fairly promising.

In mild cases removal of both lobes may be selected; if conditions are rather unsatisfactory it is better first to cut down and tie three or four large arteries and veins, two or three weeks later excising one lobe, and finally taking out the other at some subsequent time. When exophthalmos is the most conspicuous symptom, as is sometimes the case, the superior and middle cervical ganglia of the sympathetic should be removed. Indicated internal medication and carefully selected diet should be continued for months after operation.

OVARIOTOMY DURING LABOR

An ovarian tumor may be crowded down into the cul-de-sac of Douglass behind a pregnant uterus and not be discovered until the woman is in labor. Writers of last century favored opening of the cul-de-sac and evacuation of the cyst-contents with forceps delivery followed by vaginal drainage of the pelvis. This would be a fairly

good plan if all pelvic tumors were simple monolocular cysts. But on account of uncertainty as to pathological conditions and the danger of puerperal infection most gynecologists favor immediate abdominal section and removal of the pelvic growth just as if the patient were not in labor. If done by a good surgeon this mode of procedure is superior to that of vaginal puncture; but if a good, quick operator is not obtainable within a few hours the vaginal work is to be preferred.

CONSERVATIVE CESAREAN SECTION

Conservative cesarean section in the hands of an expert abdominal operator is no longer to be feared—its mortality for the mother is now far less than that following craniotomy. Destruction of the living child is no longer a justifiable operation—it should not be tolerated by the intelligent practicians of the twentieth century. And the operation is also advisable in many cases of puerperal eclampsia as well as of central placenta prævia. When fever (marked infection) is already present, pubiotomy is perhaps safer if the child can thereby be extracted alive, if not, the Porro operation is probably the preferable procedure.

OSTEOMYELITIS

On account of its comparative obscurity and absence of distinguishing symptoms this disease often passes unrecognized by the family doctor until irreparable damage results or even the life of the patient is lost. More often it is called "articular rheumatism," though not infrequently medication is directed toward eradicating supposed tuberculosis; but the deep-seated, boring pain and high fever (103°-105°F.) with no recession in morning, and absence of swelling of joints ought to be sufficient guide to correct diagnosis and treatment in most cases. The more chronic types, especially in young children, are most liable to be wrongly managed. At the earliest possible moment the medullary canal must be opened and free drainage provided—generally at the point of greatest tenderness. In chronic osteomyelitis drainage, in connection with tonics, with enforced rest, will usually give excellent results.

RUPTURE OF UTERUS

When the uterus ruptures during labor it is better to make an abdominal hysterectomy than to try to save the uterus, in most cases. When it is deemed best to repair the rent, the child and placenta (if not already delivered) should be removed by enlarging the opening in the uterine wall. The edges of the tear and cut should then be trimmed up with scissors and the mucosa and musculosa closed with No. 3 chromic gut or silk, tied with the knots in utero, and the serosa sewed with No. 1 chromic gut. After cleaning the abdomen and pelvis, a large opening should be made into the vagina through which are to be passed the ends of the strips of gauze with which the pelvis is lightly packed. Finally the abdominal incision is closed without drainage. Such operative work added to the shock already present generally ends in a death, whereas a hysterectomy which can be completed in half the time and with practically no further loss of blood is fairly safe if done by a competent operator.

ADENOMA OF CERVIX

Adenoma of the cervix is not often seen. It may closely simulate cancer in its appearance, at first, varying from a malignant tumor especially in the slowness of its growth. It is followed by ulceration, but unlike carcinoma, there is no secondary involvement of the body of the uterus and of the tissues in the broad ligament soon after ulcer develops. It can scarcely be differentiated from cancer until after hysterectomy, when the microscope shows adenoma instead of carcinoma; recognition being, then, chiefly important because of the prognosis: simple adenoma being benign rather than malignant. In many instances in which the trouble seems to be adenoma more careful section will show adeno-carcinoma. All such growths should be removed by hysterectomy, if the patient's condition permits.

::: THERAPEUTIC NOTES :::

FERRIER'S RECALCIFICATION METHOD IN TUBERCULOSIS

La Province Medicale gives a brief resume of the method of treating tuberculosis employed by Dr. P. Ferrier. The accepted method of treating this disease with rest, pure air and generous feeding is an impossibility to the laboring class who have to earn their daily bread by daily labor. Ferrier's treatment is founded upon the conception that tuberculosis is the great decalcifier and the problem is to restore these salts to the patient's body. This is the keystone of the treatment. He therefore prescribes a diet from which all acids or acid-forming substances are excluded. Thus, wine, beer, cider, liquors of all kinds are forbidden; the patient should avoid butter, the fats (on account of fatty acids) and the sauces, at least replacing them with cream. He should not take more than 200 to 300 Grams of bread daily. He should avoid acid side-dishes, oranges, lemons and old cheese. He may eat potatoes, carrots, split peas, eggs, lean meat, fish (except mackerel, herring and salmon), cooked fruits, etc.

As medication he directs the drinking in the mornings of a bicarbonated lime water, such as Pougues St. Leger, and the taking thrice daily of cachets containing calcium carbonate, Gm. 0.5; calcium tribasic phosphate, Gm. 0.2; calcined magnesia, Gm. 0.03. The patient should work according to his strength and sleep as much as possible.

This method of treatment is particularly advised for those who must work, and according to Letulle (*Presse Medicale*), who has observed the work done at the dispensary at Clichy, in tuberculous men and women who are laboring from 12 to 15 hours a day. He was surprised to find that instead of becoming more feeble these patients for the most part were not losing ground. While they were far from being fat they preserved their muscular contour in a way that healthy individuals might envy. The condition of the lungs was at first stationary, then improved slowly, progressing steadily to a condition of sclerosis. It was a touching picture, said Letulle, "to see this crowd of poor people, happy in the feeling of living again, relieved of fever and proud of their ability to gain their daily bread. What a contrast with our phthisical hospitals!" By preserving to the individual his social value the doctor thinks the calcification method of treatment has done an incalculable service to the individual and to society.

LIME HUNGER

Wright's assertion as to the action of calcium salts and of citric acid in increasing the coagulability of the blood, has been sharply questioned by Addis in *The British Medical Journal* of April 24. Addis asserts that Wright's methods for testing the coagulability of the blood were radically defective, especially in that measures were not taken to secure a uniform temperature of the specimens under test. He further shows that this is an important matter, since a fall of each centigrade degree markedly lessens the period required for coagulation, a fall of five degrees lessening it from 11 minutes, 46 seconds, to 5 minutes, 32 seconds. Repeating Wright's experiments under proper conditions, Addis finds that neither calcium salts nor citric acid lessen the time required for coagulating the blood, and hence that the therapeutic deductions drawn from Wright's work are valueless.

However, we find that a number of physicians who have administered these agents on Wright's suggestion have reported favorable results. It is therefore strictly up to the clinician to settle the moot point. But we withhold any recommendation of our own until the matter has been settled by the

general clinical testing which we trust will be given by practising physicians. Our own views will be settled by the reports received from the field.

TREATMENT OF GASTRIC ULCER

Vomiting from gastric cancer may sometimes be arrested by swallowing minute pieces of ice—though in postoperative conditions this often causes emesis. If the patient can afford it iced champagne is of service for prevention of emesis. Three or four drops of chloroform on pieces of ice will also check vomiting with some patients. Where there is great pain as well as vomiting 1-100 of a grain of hyoscine hydrobromide with 1-4 of a grain of morphine hypodermically, every four to six hours, will afford relief. If vomiting is frequent irrigation once daily with slightly salted water will give much comfort, and it also is of benefit in late diarrheas. Saline laxatives are to be avoided.

LEAD-COLIC

Lead-colic is usually recognized and properly treated in those industrial centers where plumbism is of frequent occurrence; but when the victim lives upon a farm or in a town where plumbism is not ordinarily expected to be found, grave lesions within the abdomen may be suspected when the colic first appears. Indeed every experienced abdominal surgeon can recall instances where he was called upon to open the belly, but a happy recognition of the cause prevented an unnecessary operation. For metallic ileus usually yields promptly to magnesium sulphate followed by Gram-doses of potassium iodide four times a day. The treatment should be continued for two or three weeks. The source of poisoning, however obscure, must be found and eliminated.

REFORM IN PHARMACOLOGY

Therapy, which ought to be the ornament of medicine, as it is its chief function, is still little else than a reproach, and this will always be so until we place the science of pharmacy and pharmacology on a scientific basis and cease to cumber our work with tradition and a mass of useless simples whose vaunted properties are mere nullities and old wives' tales.—*N. Y. State Jr. of Med.*

TUBERCULOUS CHLOROSIS

Some cases which heretofore would have been classed as chlorosis are now demonstrably masked tuberculosis. A microscopic examination of the blood shows the difference instantly: in the tuberculous trouble there is no poikilocytosis present (easily and instantly proven by use of Ehrlich's triacid stain) nor is the number of erythrocytes distinctly diminished; moreover, more careful examination reveals almost a normal hemoglobin percentage. The condition is what Trousseau named "false chlorosis" or "tuberculous anemia." On account, therefore, of the possibility of the existence of tuberculosis rather than chlorosis every patient presenting symptoms of the latter disease should be given the benefit of an examination of the blood by a competent hematologist, if the gynecologist himself has not the necessary apparatus or knowledge. These patients, when properly managed, can be cured, but recovery is delayed far longer than in simple chlorosis. As it is probable that the condition is a true oligemia reliance should be placed more upon the use of large quantities of water or other fluids and ingestion of an unusual amount of good food rather than the administration of iron and arsenic as in ordinary chlorotic conditions. Forced inspirations repeated thrice daily for a period of ten minutes each time, together with total abandonment of corsets and tight clothing and an out-door life will be found to hasten recovery. Here masturbation, too, plays an important part, and must be abandoned.

THE RULES OF HIPPOCRATES

In *The St. Louis Medical Review*, D. L. Field contributes a special article on: "The Beginnings of the Healing Art." We quote the following:

"The rules of Hippocrates are most admirable." He says: First, "Because our life is short and art very long, a boy must be taken in early youth." Second, "Examine whether his genius is adapted to the art." Third: "Has he received from nature an exquisite discernment, a sound judgment, a character in which mildness and firmness are combined?" Fourth: "He must combine the love of labor with the desire of accumulation of all that is amiable and praiseworthy." Fifth: "Let him practise the manual operations of surgery." Sixth: "Let him study the whole circle of science. Seventh: "Let him travel and extend his knowledge through different countries and cities, and let him observe the different air and water. He must know by what preceding signs maladies may be known, by what regimen they may be avoided, by what remedies cured. Experience alone is less dangerous than theory without experience. You must conduct him to the abodes of pain, already veiled with the shades of death; when nature exposed to the violent attacks of the enemy, falling and rising only to sink again, displays to the eye her wants and her resources. The disciple, as he witnesses this terrible combat, shall observe you seize the instant when victory may be gained and the life of the patient saved."

THE INTRODUCTION OF CINCHONA

The Jesuits imported great quantities of cinchona, charged large prices for it, and helped to maintain their foreign missions thereby. The medical profession fought against its use. The Paris faculty, and professors of therapeutics generally, heaped all the abuse upon it they could. As late as 1792, Dr. Kanold, a leading physician of Breslau, permitted himself to die of pernicious quartan fever, declaring that he would rather die than use "the quack drug." Such independent reasoners as Sydenham, Peyer, Albertini and Torti, refused to follow the lead of conservatives and tried it. But for these men the profession would soon have been disgraced. The ostracised Paracelsus did not hesitate in advising his followers to try it. But for the dogged determination of this man we should have had no laudanum for pain and no mercury for syphilis.—Eccles, *Medical Fortnightly.*

BULGARIAN SOUR MILK

Three years ago, as the result of many conversations with Metchnikoff, I reviewed very carefully the literature. While there is a certain validity to his arguments, the author is very likely to return to the fact that the Bulgarian may live 138 years on a diet of sour milk.—Reynold Webb Wilcox, *American Medicine.*

CHOLESTERIN AND TETANUS

The season is now here for the regular annual Fourth of July holocaust from tetanus. When these cases can be seen during the incubative stage there is undoubted value in tetanus antitoxin, but this seems to be of little value after the disease has once developed. Foreign investigators have found great value in cholesterin in these cases, and it certainly should be given a trial, along with hyoscine, morphine and cactin, which may be employed for the control of the convulsions. In this connection we advise a re-reading of Dr. Sterman's article on tetanus, published in a recent number of CLINICAL MEDICINE. We understand that the surgical method which he suggests has been tried in horses and with remarkable success.

CHROMIUM SULPHATE

In April we published an editorial abstract of an article by Dr. Louis Kolipinski, of Washington, contributed to the *Monthly Cyclopedia.* In this article Dr. Kolipinski reported quite remarkable results with this remedy in the treatment of a variety of diseases, including locomotor ataxia, which he declared to be curable with this salt. This article excited a great deal of interest, and as a result of it undoubtedly many physicians have tried the chromium. We shall be glad to receive their experiences. Send them in.

The Dosimetric Treatment of Scarlatina

An excellent epitome of the methods employed by our French brethren, for the relief of symptoms, for cure and for prophylaxis, as written for "La Dosimetrie" by Dr. Toussaint

SCARLATINA is an eruptive, infective, very contagious, often epidemic fever which may attack persons of any age, but more especially the young. Scarlatina is characterized by a pronounced clinical picture of a heavy fever, stomach foul, teeth covered with sordes, tongue heavily coated, no appetite, senses dull, patient apathetic. (This clinical picture the French designate as the *etat sabural.* —THE GLEANER.) There may be an "*angine blanche*" (which seems to mean a sore throat with a grayish-white croupous membrane) or there may be only a simple catarrhal condition. There is always a strong fever, and this nearly always accompanied with delirium and a scarlet-colored general exanthem followed by desquamation.

Scarlatina in its course passes through four periods, namely: (1) The period of incubation. (2) The period of invasion, lasting 24 to 48 hours. (3) The period of eruption, lasting at least four days. (4) The period of desquamation, which at times may be prolonged to three or four weeks.

It is quite difficult to surmise a case of scarlatina in the first period, unless it be in a time of epidemic, when the attention of parents, guardians, teachers and physicians is drawn to it and any change in children's appetite and liveliness and playfulness is quickly noticed in family or boarding school. At times the disease becomes pronounced at once without anyone having had occasion to suspect it. But usually it is first noticed that the child has no hunger, and when persuaded to eat, it vomits up the food. It complains of a feeling of lassitude and feverishness, and of sore throat. The physician is called and he finds the child's temperature is above normal, the throat is diffusely red, and at times there is a white exudation on the tonsils. Looking on the child's naked body it may be found broken out with the exanthema.

Cases were seen where children badly taken care of had gone through a scarlet-fever attack without being confined to their room, and a furfuraceous or shreddy desquamation discovered by chance permitted a retrospective diagnosis of a scarlet-fever which passed unnoticed. Then, again, a case may become very complicated and severe and may terminate fatally.

Treatment

Scarlatina being an infectious disease, the principal indication for treatment, as soon as the symptoms warrant the diagnosis, would be:

First, to put the affected patient under the influence of calcium sulphide, according to his age. The adult receives 0.02 Gram and the infant 0.01 Gram per dose every half hour. If there is an exudation present

(*angine blanche*) the dose-interval must be shortened in order to obtain the point of saturation with the remedy more rapidly, giving it every fifteen minutes. It is best to add at this time the sodium benzoate in the same dosage.

Second, the antisepsis of the throat must be vigorously carried out with boric-acid water and swabbing with glycerite of tannin, and later with pure lemon juice.

Third, the fever which is violent from the start may pass 40° and 41°C. (104° and 106°F.), and it is to be combatted vigorously with the dosimetric defervescent triad in the adult, given together with the calcium sulphide. In the case of infants give the infantile trinity, aconitine, veratrine and brucine, a dose every half hour, later every hour.

Fourth, if the eruption does not come out sufficiently strong we add 0.001 Gram of pilocarpine nitrate every hour, to stimulate the skin, until the effect is produced.

Fifth, the patient should be allowed to drink much, for as the temperature of the body is highly elevated the tongue becomes dry, the thirst urgent, the urinary secretion diminished, and there is generally constipation also. Milk should be given, and if necessary some diuretic and diaphoretic infusions. Intestinal lavage should be frequently made, but caution should be had not to induce a fatiguing diarrhea.

Sixth, as long as the fever lasts the patient should not be given solid food. Milk should be the patient's only nourishment, to which may be added one or two oranges a day.

Seventh, when the fever has disappeared the milk is still to be continued, to which some meager light gruels may be added, also egg and milk, soft-boiled egg, and stewed fruit.

Eighth, during desquamation the greatest care must be had against taking cold. When the desquamation of the mucous membranes are in action the least cold-taking may give rise to hematuria, albuminuria and anasarca, that train of evils which comes in the wake usually of albuminous nephritis, the consequences of which are very serious.

When the urine becomes less in quantity, or becomes darkish—proving that it contains more or less blood—the patient must promptly be put on an exclusive milk diet. The child also is given brucine, Gm. 0.0005, digitalin, Gm. 0.001, and iron arsenate, Gm. 0.001, one dose of each three to six times in twenty-four hours. In adults the brucine is to be replaced with strychnine arsenate, Gm. 0.001. The same treatment is to be pursued when albumin appears in the urine or when anasarca makes its appearance.

When itching occurs, with the desquamation, it will be well to anoint the patient's body with borated vaseline, and while it will alleviate the itching it will also prevent the microorganisms carried by the epidermic debris from becoming dispersed.

When desquamation is completed, the patient's body is to be thoroughly washed with warm soap-suds and dried, then dressed in fresh clean garments. Every article of wearing apparel and bedding that has come in contact with the patient during his sickness is to be thoroughly disinfected.

Prophylactic Treatment

When a case of scarlatina occurs in a family, boarding house or school it will be wise to make a regular practice of antisepsis of mouth and nose on a large scale, urging it upon all members of the household and more especially of the younger ones, putting them all on the prophylatic treatment of calcium sulphide, Gm. 0.01, six to twelve doses a day, for an extended period.—Dr. E. Toussaint, in *La Dosimetrie*, April, 1909.

LACTOIODIDE—A NEW ALBUMIN-IODINE COMPOUND

Experiments have been carried out on animals with this preparation by Felix Stanjek of Berlin, in the Rudolph Virchow's hospital. Lactoiodide is a combination of milk-albumin and iodine, about 5 percent of the latter, held in firm combination, so that weak alkalis and acids produce no splitting up; but it does undergo decomposition within the animal organism. The digestive juices of the stomach and bowels are able to convert the greater

part of the iodine into an organic iodine when kept in the incubator for about two hours, that is, it may transmute this iodine into a soluble and absorbable organic combination. Given to animals, both by mouth and hypodermically, demonstrated the non-toxicity of this compound, while after one single injection iodine continued to be excreted by the urine and feces for as long as eight days. This fact gave rise to the idea of trying this substance in place of potassium iodide and its many substitutes in human medication.

The trials made showed it to act as a mild iodine preparation, similar to that of potassium iodide. It improves the general condition of the nutrition, is readily taken by patients, and so far no disturbing side-effects have been observed. Since the preparation consists in great part of pure milk-albumin, its iodine effect combines with it a direct nutritive action, representing from 75 to 150 grains albumin three times a day.—*Apotheker-Zeitung*, 1909, p. 308.

INFLUENCE OF DIGITALIS AND STROPHANTHUS ON THE CIRCULATION

Views do not as yet agree as to the action which digitalis exercises on the circulatory sytem. According to some the action is primarily on the heart, according to others the effect is marked principally on the blood-vessels, while a third opinion is that the action is simultaneously both on heart and blood-vessels. Lately Dr. C. Tigerstedt) Scandinavisk *Archiv for Physiologie*), has endeavored to establish by precise experimental researches the modification which digitalis and also strophanthus produce on the circulatory apparatus. He had recourse to a procedure which R. Tigerstedt invented and which makes it possible to estimate the work performed by the heart by measuring the quantity of the blood thrust out at every systole of the heart and determining the blood pressure by counting the number of pulsations.

After injecting digitalis or strophanthin the blood pressure sometimes increases very rapidly, but generally quite slowly. This augmentation is due principally to the contraction of the blood-vessels and only in very little part to the increase of the volume of blood thrust out each second by the heart. The fact is that this volume is not always increased. Moreover, this increase lasts but a short moment and does not coincide at all with the maximum blood pressure. This work of the heart, which is measured by the volume, the swiftness and the pressure of the blood in the vessels, is considerably increased after digitalis or strophanthin is injected. It generally diminishes before the pressure has attained its maximum and it may become very low at the moment of maximal tension.

It is worthy of note in these experiments that there was not the least difference in the effects observed from the two drugs under consideration.—*La Medicine Orientale*, 1909, p. 77.

CHOLESTERIN VS. HEMOLYTIC SERA

Iscoresco (Societé de Biologie) has shown that the antagonistic power of cholesterin against the hemolytic effect of certain serums consists in its strengthening the red corpuscles of the blood. Proceeding from these facts, he gave cholesterin in daily doses of 1 1-2 to 2 Grams (20 to 30 grains) in purpura rheumatica, in chlorosis, in pulmonary tuberculosis and in swellings of the lymphatic glands and achieved cures or at least essential alleviation of the sufferings.—*Wiener Medizinische Wochenschrift*, 1909, No. 4.

THE IMAGINATION AS A DISEASE

The well-known neurologist, Dr. Dubois of Bern, Switzerland, has published a book giving a survey of his views on the origin of certain neuroses as arising from the imagination. His therapeutic procedure consists, therefore, in strengthening the patient's intellect by showing him the irrationality of his imagination and fears, that is to say, he persuades him out of it. And Dubois really achieves his aim in many instances. He thinks that in some psychoses such as hypochondria, melancholia, etc., a similar procedure might have good results. He admits

however, that in this region he is but a layman, and his psychiatric explanation indeed makes the impression which a layman would. —*Wiener Medizinische Wochenschrift*, 1909, No. 4.

DIGIPURATUM

This word is for short the same as "extractum depuratum digitalis." This preparation contains all the active digitalis glucosides, and is freed from certain disturbing commixtures by a very careful process.

This purified digitalis extract is a fluid of yellow color, forming a yellow powder after inspissation with sugar of milk. This final product is adjusted so that 0.1 Gm. (gr. 1 1-2) of the powder equals 0.1 Gm. (gr. 1 1-2) of full-strength digitalis leaves. Hoeffner of Badenweiler used this digitalis preparation in over forty cases and comes to the conclusion that Knoll's extract does all that can reasonably be asked of a good digitalis preparation.

Digipuratum is taken willingly by all patients and no gastric disturbances have occurred. The effect on the pulse and on diuresis took place comparatively rapidly. With 0.4 Gm. (grs. 6) of digipuratum one gets within twenty-four hours distinct digitalis effects, which can be maintained the next two days with 0.3 Gm. (grs. 4 1-2), and further on with 0.2 Gm. (grs. 3) daily. With this purified extract it was more easily possible to maintain an energetic digitalis-cure than with the inconstant digitalis leaves, and without toxic phenomena from cumulation. —*Pharmazeutische Zentralhalle*, 1909, p. 81.

ARSENOPHENYLGLYZIN IN EXTERNAL EYE-DISEASES

Dr. Wilhelm Grueter of Greifswald has made trials with the remedy named in the title in certain eye-diseases. The remedy is a sodium salt and is successfully used in the trypanosoma infection. It is a yellow powder easily soluble in water. Kept in hermetically sealed tubes it will remain unchanged for any length of time, but in contact with the air it changes its color gradually to red-brown. The decomposed substance exercises an irritating influence upon the healthy eye, consisting in lacrymation and injection of the conjunctiva of the bulb. The author's trials gave the following results. A 5-percent salve of the undecomposed arsenophenylglyzin is perfectly non-irritant and is a very useful remedy in eczematous affections. Its main preference is its absorptive effects in eczematous pannus and in keratitis fascicularis. It also shows its energetic resorptive effects in trachomatous pannus but does not seem to influence the conjunctival trachoma.—*Apotheker-Zeitung*, 1909, No. 22.

VALOFIN

Valofin is a new preparation of valerian, and Dr. Flesel, in the *Medizinische Zeitung* (No. 10, 1908), recommends it in hysteria, neurasthenia, palpitation, menstrual affections, etc. It does not taste bad.

LARYNGEAL TUBERCULOSIS KNOWN TO THE ANCIENTS

At the International Laryngo-Rhinologists' Congress, held at Vienna, about a year ago, Dr. Imhoff of Prague expressed the idea that the ancient Greeks and Romans had a knowledge of laryngeal tuberculosis. Important is Galen's therapy in laryngeal ulcers. The patient is to lie on his back and keep in the mouth medicaments that act beneficially on ulcers and, suppressing cough, they descend slowly into the windpipe. Galen made use of a medical expert to try this procedure, and he affirmed that he felt the medicaments actually reach the ulcerated place in the larynx. In this connection there comes to mind Th. Horyng's recent recommendation of laryngeal gargling, which is based on the same principle. This therapy of Galen is further recommended by Oribasim. Actius elaborates further the attempt of Galen to diagnose ulcerative processes in the larynx from the character of the crusts expectorated from the larynx.—*Wiener Medizinische Wochenschrift*, 1909, No. 5.

Tuberculosis: Our Readers' Comment

In the next few pages we give a variety of opinion from the brethren "on the firing line" concerning tuberculosis, especially as to the remedies and methods useful in its treatment

IN considering the treatment of tuberculosis I shall discuss the medical side only, it being well understood that fresh air, sunlight and proper feeding are of paramount importance.

When undertaking the treatment of a case of tuberculosis two things should be borne in mind, namely, first, that you are dealing with active foci of infection and, second, that there is a constant more or less severe toxemia present.

When, upon making an examination of a patient, you discover that you have an active case of tuberculosis to deal with, do not lose your head and rush away to secure the proprietary remedy that has the most convincing label attached to it. Get at the pathology, at the general condition; get at the cause.

Take the foci of infection, for instance; the whole object is to prevent their increase and to heal those already formed. The general health must be built up to as great a degree as possible, and some drug administered that is a powerful foe to depraved bodily conditions. For the first condition codliver oil is probably the best "builder" we have. Schlotterbeck & Co. are making a very acceptable and palatable preparation of this oil. Beware of "tasteless" codliver oil. To my mind such a "tasteless" preparation is about as valuable as, say, peruna, minus the mental effect of the label.

Next, select the drugs that are the most valuable in septic conditions. Those who have tried them will, I think, agree with me in choosing calcium sulphide (coated pills) and echinacea (compressed tablets). Give these drugs to the point of saturation and maintain that condition.

In the treatment of all cases of tuberculosis you will of course see to it that elimination is maintained and that proper methods of living are observed. Don't give them cough syrups because they cough; don't give them fever powders because they have fevers. Get at the foundation of the disease and crowd it out. Leave the frills to peruna.

C. A. BALLARD.

Logansport, Ind.

[Dr. Ballard strikes a few "bullseyes." Probably the three most important things to be considered in treating "consumption" are those to which he calls attention: (1) *Elimination* of waste, intestinal and systemic; (2) *nutrition*, carrying with it the idea of *repair* of crippled tissues; (3) *direct attack upon the infective agents* and their poisonous products.

How? Keep your patient "cleaned out," with calomel, salines, enemas, etc., as needed, and "cleaned up" with the intestinal antiseptics—and for this purpose we prefer the sulphocarbolates, even above beechwood creosote. The whole digestive canal must be kept *right*. Its normal functioning power is essential to success. Aid it with digestion-aiding remedies if needed. Keep

your patient quiet during active stages, feed him well. Give him codliver oil, cream, butter or some of the vegetable oils, as olive oil, corn oil, etc.

As for the germs! Dr. Ballard's suggestion relative to calcium sulphide and echinacea is an excellent one. They act splendidly in some cases, supported by nuclein, which we think one of the best of remedies for arousing the phagocytes to attack the microorganisms. The place of tuberculin is not a very clear one, but it seems a valuable remedy in many cases.

We have just touched our "three points." They are not all there is to be known concerning the treatment of tuberculosis.—ED.]

BROMINE USEFUL IN TUBERCULOSIS

The article in your May number (page 576), by Dr. J. M. Day, on "A Case of Tuberculosis," shows him to be so eminently practical and painstaking that I cannot forebear offering one or two suggestions which, if wisely added to his present measure, will soon clear up that case soundly; and perfect his "ideal treatment," that is, if thirty years of uniform and unvarying success in curing many desperate and all reasonably curable cases is any test of treatment.

I may have been remiss in not joining sooner this work of giving practical light from my long experience in curing the pulmonary form of tuberculosis, but I have never craved the reputation of being a "consumption doctor"; besides, for more than twenty years, in the profession, "only quacks cured consumption." So I simply cured the coughs, hectic fever, nightsweats, emaciation, weakness, etc., without naming the trouble and thus saved my professional "bacon."

Of late, however, since it is admitted that "consumption may be cured," "under special conditions," that precaution is not now so necessary, and the profession is busy learning the "conditions."

The "out-of-doors" and free-air and free-feeding factors seem well settled, but the equally important one of *how to use the air to breathe normally, freely* and *fully* through the nostrils habitually, and especially exercising (not exhausting) the entire respiratory muscles and lung-tissues at least three or four times a day seems not to be properly appreciated. Of course with diseased lungs normal breathing is impossible without assistance, since the chest movements, passage of air, etc., cause irritation, pain and coughing. These latter conditions must be controlled. To do this and arrest the progress of the disease, the first condition is to "kill the bugs," disinfect and unload the diseased accumulations from the lungs, *without* the *pounding cough* and stimulate the healthy lung-tissue to throw off that which is too diseased to rally and heal the balance.

There is but one drug known to me which can be so prepared and guarded as to do safely and certainly all this, and that is *bromine*. It is literally a "consuming fire" to the "bugs" and their ashes, including sputum, lung, and tissue too diseased to rally under its escharotic disinfecting, alterative and stimulating power.

Bromine is a difficult drug to handle—*must not be inhaled full-strength*, but largely diluted and properly compounded with deodorized alcohol, chloroform, ether and hydrocyanic acid (the latter to control spasm and cough). Wisely used for "effect," by inhalation, it is a marvel of efficiency in clearing up a diseased lung.

If Dr. Day will have the following prepared and used by his patient faithfully three or four times a day, with a few whiffs between times, as necessary to control the cough from "pounding" the sore lung, adding possibly a few hints as to proper breathing and use of vinegar or salt or soda sponging to control sweats, if necessary, that chest will soon get sound.

Alcohol, deodorized	ozs. 3
Bromine	drs. 1½
Chloroform (Squibb's)	drs. 3
Ether	drs. 3
Hydrocyanic acid, dilute	gtts. 30

Keep well stoppered in a glass-stoppered bottle to prevent waste and deterioration. Directions: Put 20 to 30 drops in an inhaler with water, and inhale deeply, shoul-

ders back, three or four times a day as directed. If irritant, use shorter time till the patient gets able to use wisely "to effect" in his own case.

If properly used in advanced cases it will cause a great increase of sputum for from five to eight days, after which it will lessen rapidly till it stops. Of course *nutrition must be maintained fully* along lines indicated by Dr. Day.

This formula has a very interesting Chicago history, too long to give here, but it *will bear close study.* It is to a tubercular lung what arsenical paste is to an epithelioma, only painless and more efficient since it selects, kills disease, disinfects debris, alters nutrition, rests the chest and patient, and stimulates healing.

CHAS. E. DAVIS.

Eureka Springs, Ark.

[In a "P. S." that of course seems to us admirable Dr. Davis says: "I need not say that I consider yours the most valuable medical journal published, because the most *practical,* up-to-date and *often a little ahead* of the times."

With all our modesty we can not refrain from printing some of the nice things said about us, though letters like this come "in shoals." Thank you, Brother Davis!

Have other members of the "family" had any experience with bromine in tuberculosis? Personally we confess to ignorance, but we can see good reasons why it should be of value. It belongs to the same family as iodine—one of our best remedies in some forms of the disease, though neither iodine nor bromine can hardly be vaunted as a "specific" or as a "cure" for the dread destroyer, tuberculosis. Let us have reports from others.—ED.]

VINEGAR IN TUBERCULOSIS

One of our friends, who wishes to remain anonymous, writes us as follows:

"You asked for suggestions in the treatment of consumption. I will give you the following which you can use if you think it worth while.

"Among my notes I find that the early Catholic priests (Jesuits) of California, two hundred years or so ago, were in the habit of advising consumptives to use pure cider vinegar properly diluted with water and heated until it steamed. Then by placing the dish on the lap with a light muslin cloth thrown over the head and dish to slowly and deeply inhale the vapor two or three times daily. They found it useful to patients with laryngeal and pulmonary tuberculosis. Care should be taken that the vapor is not strong enough to irritate."

Vinegar is an old remedy, but a good one. Of course it will not cure tuberculosis, but used as the doctor directs it certainly will give relief, as we can testify from personal experience with vinegar vapor for the relief of the cough of tuberculosis. See Dr. Waugh's article on page 770, this issue.

CREOSOTE IN PULMONARY TUBERCULOSIS

I am of the opinion at the present time that there is only one medicinal treatment that is really valuable in pulmonary tuberculosis, and that is beechwood creosote, internally and by inhalation. In order that it may be curative it must be used with intelligence and persistently during many months. Internally the best formula is:

Beechwood creosote (Merck's), 6 drops; glycerin, 1 ounce; rye whisky, 2 ounces. Dose, one dessertspoonful every two, three or four hours, best diluted with a little water.

The best formula for inhalation is: equal parts of beechwood creosote (Merck's), alcohol, and spirit of chloroform. Use ten drops on the sponge of a perforated zinc inhaler. Repeat a few drops as required. The inhaler should be used frequently; at first for a few moments each time; later (after a week or more) it may be used half an hour or an hour at a time. Finally, it may be used almost continuously during the day and frequently all night, without interfering with sleep. Occasionally it is necessary to lessen the proportion of creosote, in the inhaling formula at least, for a while and until the

patient is accustomed to the use of the inhaler.

A few patients never use the inhaler in a thoroughly satisfactory way by reason of personal indiosyncrasy or inability to understand about its proper use. Whenever the inhaler is used during many hours of the twenty-four, a smaller amount of creosote is required internally. When, on the contrary, the inhaler cannot be used frequently and for a long while, it is necessary to give more creosote internally. In but very few cases is it desirable to go beyond half a minim every two hours. Usually, when intolerance has arisen, it is because of too large or too concentrated doses. Creosote should always be given in solution.

Following out my plan of treatment carefully will relieve most patients of unpleasant symptoms. It will help cure a large number. It will hurt none. It is the best adjunct to fresh air, sunlight, good food, and rest.

Without this treatment many patients will die; with it, taken in time, many will recover who otherwise would not. The foregoing is the conviction born of over twenty-five years of a large and varied experience. There is no treatment of any value, local or general, I have not faithfully tried, I believe. This is far the best of all. For work that I have done to prove it I would refer to my papers in volume iii, "Transactions of American Physicians;" to August number, 1908, of *American Journal of the Medical Sciences*; to the October issue of *New Jersey Medical Times*, and elsewhere in discussion before medical societies.

BEVERLY ROBINSON.

New York, N. Y.

TREATMENT OF TUBERCULOSIS BY INTRAVENOUS USE OF TUBERCULIN AND ATOXYL

This treatment was first advocated and used by Dr. Max Rothschild of San Francisco, who has had remarkable results in about two hundred cases. By myself it has been tried in thirty-three cases, in all stages of the disease, with the following results:

Twelve incipient cases: Bacilli disappeared in sputum; abatement of all other symptoms; patients at work and in good health at present time.

Fifteen cases in second stage: Considerable improvement in regard to cough, expectoration, fever; increased weight.

Six third-stage cases: One with cavity gained thirty pounds; bacilli rapidly disappearing; no cough or expectoration; patient at work.

Three in third stage. No improvement.

Two in third stage: Gain in weight; less fever and expectoration; still under treatment.

The treatment consists in outdoor life; carefully regulated diet; rest; clean alimentary canal; use of sodium ichthyolate, 20 to 120 minims daily; injection in the veins of a solution of Koch's old tuberculin, commencing with minute doses, gradually increasing as immunity progresses; combined with a 12- to 15-percent solution of atoxyl or soamin to increase phagocytosis, using the streptococcus or staphylococcus serum in addition when these germs are present in great numbers.

Great care must be used to secure absolute asepsis and to use sterile and only fresh solutions. Hemorrhagic cases are treated by absolute rest, ice over heart, and atropine. For high fever—rest in open air, cold sponging of saturated epsom-salt solutions.

For nightsweats—daily baths of epsom-salt solution. For persistent and annoying cough—small doses of codeine and the use of violet leukodescent ray.

Mercury succinimide was used in five cases; all improved to a certain point, then rapidly declined.

CHARLES A. SHEPARD.

Needles, Calif.

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[This is an excellent report. It is concise and exceedingly practical. We are curious to know why Dr. Shepard prefers the *intravenous* method of administering tuberculin; also glad to learn of his experience with mercury succinimide. For the production of phagocytosis and as a general "protective" we prefer nuclein. This rem-

edy we consider an exceedingly valuable one in tuberculosis; its use is not attended with the dangers and discomforts of tuberculin therapy, and of its effectiveness in suitable cases there is no doubt. Many favorable reports following its use in this disease have come to our attention. Dr. Shepard's favorable experience with atropine in hemorrhage is exactly in line with our own.—ED.]

BLOOD-DIAGNOSIS OF TUBERCULOSIS

On the title page of the June number of CLINICAL MEDICINE the readers are invited to give their individual opinions on some phase of treatment of that insidious disease, tuberculosis.

In the judgment of the writer the most important consideration in the treatment is to settle as early as possible the question of diagnosis. When once the practician is certain as to the nature of the disease presented, a long step is taken toward the proper treatment. From a practical experience of more than forty-one years with tuberculosis in its varied forms of manifestation the writer is glad to add his mite to the important discussion now pending.

Let us ask at the outset, Is there any means of determining that an individual who is evidently suffering from some grave constitutional fault is in the pretubercular stage of tuberculosis? And we may say that nature evidently has located this proof in the blood itself (where we naturally should be inclined to look for it) even before any foci of invasion can be determined by the most painstaking measures of physical diagnosis.

The peculiar granular masses sometimes seen, and termed (very properly) "*third blood-corpuscles*," are the vehicles for conveying the disease. They are readily enough seen with even a relatively low-power microscope. Investigation has led, finally, to the conclusion that these masses are pathological always in their nature. Furthermore, they are truly pathognomonic, in that they surely declare the presence of a tubercular diathesis.

We may well be assured that the "third blood-corpuscle" is *the very first indication*, although every other sign be absent at the onset of the tubercular process. This peculiar corpuscle makes its appearance in the blood long before any cough or any of the other heretofore recognized premonitory symptoms are recognized. It is found as a pretubercular condition in all the various forms of this disease, such as Potts' disease, hip-joint disease, lupus, chronic abscess, asthma, in some cases of rheumatism, and occasionally in certain individuals who appear to be perfectly well; but whenever found, it is always a forerunner of tuberculosis.

Dr. Robert Lincoln Watkins of New York, says in connection: "From my experience I believe that the third blood-corpuscle is the *sine qua non* of the tubercle bacillus, and as such is the chief means of diagnosing this dyscrasia which it produces. It is also undoubtedly one of the foods of the tubercle bacillus and the only visible one in the blood current." He says further, in reporting a series of experiments extending through many years: "I have demonstrated that the tubercle bacillus will live in acute tubercular blood, but will not live in blood which does not contain the third blood-corpuscle. This parasitic growth is very often discovered in the blood of infants born of tubercular mothers, while it has never been discovered by me in the blood of infants born of non-tubercular women when from the very beginning they have been nourished from their mother's breasts."

In closing his article, which in my view is conclusive evidence of the truth of his premises, Dr. Watkins makes this observation: "I present this view to my brethren, hoping that they will be assisted in their diagnosis as I have been in the incipient stage of tuberculosis, most difficult often to discover, and most important to the patient in that the disease at that stage is more controllable than at any other time."

I want to emphasize especially the value of proof of absence of the tubercular granules from the blood, which enables us to state indisputably that no tuberculosis is present. The symptoms, though possibly suggestive of tuberculosis, must therefore be caused by some other disease.

The original paper of Dr. Watkins may be found in *The Medical Record* of July 17, 1894, and is well worthy of more general reading. The many readers of CLINICAL MEDICINE may not have had access to this article and this is sent in to the organ of the CLINIC "family" to call attention to a phase of "diagnosis of tuberculosis" that has not received its due measure of attention.

A. G. BLODGETT.

Ware, Mass.

MERCURY SUCCINIMIDE IN TUBERCULOSIS

The use of mercury in the treatment of syphilis has undergone many changes in the past fifty years. From the disgusting inunction method, to the administration of blue mass, and from that to the hypodermic method, have been great steps, which have been as important as they are advantageous. One of the latest remedies among the mercurials is the succinimide of mercury. This is being very warmly recommended for the treatment both of syphilis and tuberculosis. It has been extensively used by hypodermic injection with much success. It is found to be more rapidly soluble than the other mercurial salts, and at the same time much less painful and less likely to cause induration.

Considerable prominence has recently been given the use of this drug in the treatment of pulmonary tuberculosis. Dr. B. Wright, of the United States Naval Hospital at Fort Lyon, Colo., has made a large number of experiments that would lead to the belief that this is a valuable method. Some investigators have asserted that the results must be due to the fact that probably the majority of the cases treated for tuberculosis had at one time a specific lesion, and that the advantages were attributable to the modification of the specific disease and not to any influence over tuberculosis. This may or may not be, but several thousand cases have now been treated by this method, by investigators both in this country and in Europe, with like success, and it seems probable that mercury succinimide has come to stay as a remedial agent in syphilis and tuberculosis.

It is believed that mercury administered by the hypodermic or intramuscular method in the treatment of tuberculosis acts in two ways: First, it is a tonic, increasing the vitality of the cellular elements of the various organs and tissues; and second, it is bactericidal, rendering the blood bactericidal and producing a body in it which seems to have a direct destructive action on the tubercle bacillus.

Wright, who has studied this matter quite closely and made extensive experiments, in interesting papers published in *The U. S. Naval Bulletin, The New York Medical Journal*, and other publications, believes that the action of mercury is cumulative and lasting, and that there is an immunity conferred by the early doses, which, in addition to the resistance to the disease developed by the increased cellular vitality, places the patient in such a condition that as the treatment is continued even smaller doses of mercury are required to obtain the desired results.

Only by close observation of each patient can the original and succeeding doses be determined. One thing is certain: the medication should never be pushed to the point of salivation. The experience of Wright with this method has shown him that an actual dosage for the original series cannot be carried much beyond 30 injections without producing the conditions mentioned above, and that after a period of rest, on resuming the injections the dose carried through the second series must be reduced.

A routine therefore has been developed by experience as follows: One injection of 1-5 grain of mercury succinimide, preferably intramuscular, is given in the gluteal region, every other day, until thirty injections have been administered. Then the injections are discontinued and potassium iodide, three to ten grains, is given, well diluted with water, one half an hour after meals, for two weeks. The iodide is then discontinued, and no further medication is given for a week. The injections are then resumed, as follows: One injection every other day until thirty injections have been given; on alternating injection days, giving a 1-5 grain of the mercury salt and 1-10 grain respectively. After

thirty injections, the same course of potassium iodide is given, as followed the first series of injections, and then another week left free from medication. The injections are again resumed, 1-10 grain of the mercury being given every other day until thirty injections have been given.

By the end of this third series it may not be necessary to give any further treatment; but experience must direct in this.

Wright does not consider these recommendations as an absolutely invariable, but simply a relative, guide. A close observation of each individual, noting the temperature first, the weight and the general condition will fix the dose after the first series of injections. It is quite possible that the first injection will produce a slight febrile reaction, after which the temperature should fall to what it was before the injection.

There is still a great opportunity for investigation along this line. Undoubtedly the use of mercury, and in particular the succinimide of mercury, is of decided adjunct value in the treatment of tuberculosis. It is quite possible that this, associated with the usual necessary hygienic methods, will be sufficient to effect a cure in a proportion of cases. To it may be added tuberculin, depending upon the result of the treatment and the mind of the physician. Nuclein should be given in practically all cases, and attention to the digestive canal and to the nutritive processes is imperatively necessary to success. At all events, the intelligent and painstaking work of Dr. Wright has opened up a new way to success in the treatment of this disease.

TUBERCULOSIS PULMONALIS: FARADISM AND CHLORINE TREATMENT

My first instructions to my patients are: live in the open air, sleep in a room, tent or screened porch that permits pure air at all hours. Let the sun shine on your body as strong as possible, but protect your head from the direct hot rays.

I instruct them in the art of deep breathing. I direct them to exercise several times during the day, on retiring, and on awakening at any time during the night. On going to bed, if not too exhausted or sleepy, I tell them to roll in the bed, gently turning over several times; if sleeping in an iron bed, to catch hold of the head bars, which will assist in any bed exercise taken.

I request them to eat from three to nine raw fresh eggs daily, allowing a little salt; and more eggs if they agree well; fresh milk all they can consume without causing trouble; good pure water, all that is required. They must eat only that which agrees with them. Should the bowels become constipated, use a saline laxative.

I employ the faradic current once daily, going all over the back and front of chest or sometimes all over the body. The sitting should last from ten to fifteen minutes. See that every motor point is touched and every muscle brought into activity several times during the sitting. The current should be just strong enough to cause contraction of the muscles controlled by the motor points. The theory for the use of electricity in this disease is that the motor system being stimulated into activity would also make the blood current active, forcing out stagnant blood and allowing fresh blood to enter, thus feeding the starved cells and revivifying the cells not already destroyed by the disease.

The remedy I use in this disease is the Greenwood formula of chlorine mixture. (See Flint's "Practice" or Waugh's "Treatment of the Sick.") This I give internally in teaspoonful doses, in syrup if preferred, several times daily. Several times daily I make patients spray their throats with the same mixture. I also require them to inhale the same, through cotton, or wash the nose with a nasal douche or atomizer. After giving them their daily electric treatment I give them inhalations of nascent chlorine gas from 2 1-2 to 5 grains, preparing it fresh at each inhalation. Caution: When making this gas, watch the patient; stand by a window that you can open at a moment's notice should the gas cause any ontoward effect, such as sneezing, extraordinary coughing or dyspnea. After they have taken one or two whiffs, take them to the sitting room, let them sit down for ten minutes to make sure they

are not affected with any extraordinary weakness, cough or sneezing, or any other untoward effect of the inhalation.

The theory for the application of the chlorine mixture is this: If consumption is caused by a germ or fungus this must be destroyed. I truly believe that the chlorine mixture referred to is about as near a germ-destroyer as we can compound. By its use internally we destroy the microbes it comes in contact with, because it contains chlorine gas in such minute subdivision. By the use of the spray it comes in contact with all the morbid matter contained in the nasal fossa, the throat, the fauces, tonsils, etc. By inhalation you get the chlorine gas properly diluted with air into the lungs, and no doubt it has its germicidal effect in every portion of the lung it reaches. One or two inhalations of a strong gas (say, the gas evolved from 5 grains of potassium chlorate and 6 to 8 drops of hydrochloric acid) will last in the nasal fossa for from six to eight hours.

I want to state that I have no experience with far-advanced cases, the cases cited came for treatment after they had the cough and other indications, say three or four months after they noticed that they were losing flesh, strength, had a cough, fever, spitting up matter in color anywhere from white frothy stuff to a yellow or greenish matter.

Case 1. Jimmie A., age 26, colored. Family history: Mother living and in apparently good health; father dead, cause unknown. One sister died of consumption six months prior to this patient's taking treatment. There was loss of flesh, fever, cough, nightsweats, etc., diagnosed as incipient consumption of the lungs. I commenced treatment Feb. 19. After thirty days there was no fever, the cough was improved, and the patient was gaining flesh. He was discharged after taking four months' treatment. The patient, now after eight years, is alive and well, weighs 150 pounds, has never had a return of any symptom of the disease since.

Case 2. Florence A., age 22, colored. Mother sickly, no consumption; father dead, cause unknown. One sister and one brother died of consumption. This patient presented the usual symptoms of commencement of pulmonary tuberculosis, fever, loss of weight, cough, nightsweats, etc. I commenced treatment in June, 1902. After taking treatment about six weeks she began to improve, fever subsided, cough became less, and she took on weight. The patient was discharged after three months' treatment. She is still alive, weighs 180 pounds. She got married but has no babies.

Case 3. Clark W., age 28. This patient was seen and examined by two physicians before calling on me. They pronounced his case consumption. He wanted something more done for him than the open-air treatment and diet. On examination I could only verify the diagnosis of my medical brethren, as he presented all the usual symptoms. I commenced treatment July 9, 1908. His evening temperature on July 9, at 3 p. m., was 101.6°F. It ranged that way for a week, then the highest point was 100°F. The following week at any hour from 10 to 1 p. m. it was normal. On Aug. 9, at 12:30 p. m., temperature normal. Cough less, gaining weight, no nightsweats for several weeks, and on the high road to recovery.

In conclusion I wish to say that in all cases treated by the method described the patient notices how the muscles respond after taking three to four weeks' treatment. Those deep-seated and which show no movement after three or four weeks, show all the movements of the muscles as soon as the motor points are stimulated by electricity. The skin becomes smooth and healthy-looking, whereas before it was dry and parched.

J. H. LIEBKEMANN.

Memphis, Tenn.

TUBERCULOSIS: GENERAL TREATMENT

1. Careful elimination.
2. Forced feeding—eggs, milk, beef, etc.
3. Pure air, twenty-four hours per day.
4. Sunshine, all one can get.
5. Limit the exercise to conserve energy.
6. Do not upset digestion with creosote or its compounds.
7. Keep mind occupied.

F. A. PITKIN.

Palmyra, N. Y.

[Dr. Pitkin has "gone us one better." We asked for twenty-line articles. He has condensed a whole bookful into less than ten lines. It is excellent, though we wish he had gone a step farther and given his *positive* methods of dealing with various phases of the disease.—ED.]

TUBERCULOSIS: ITS TREATMENT AND CURE

At the Sunlight Sanatorium for Tuberculosis of the various methods employed the most satisfactory I find, after six years' experience, to be the following, applied as conditions may indicate.

First: Concentrated sunlight-baths daily.

Second: Koch's tuberculin (new).

Third: Pure mountain-air night and day.

Fourth: The regulation of exercise and enforced quiet or rest if temperature reaches 100°F.

Fifth: Special attention to diet. No stuffing beyond the ability of the system properly to assimilate. Alkaloidal medication.

Through blue glass, in the solarium, set at an angle of 45 degrees, the sunlight is focused upon the bare chest of the patient. It does not blister nor cause any unpleasant sensation. We cannot demonstrate the action of the sunlight upon the lung-tissue. It may be inhibitive, holding in check the activity of the disease till nature begins her work of repair. After ten minutes' exposure to direct sunlight the tubercule bacilli are destroyed. As it is not due to the heat, the germicidal properties must lie in the chemical rays. By the use of the blue glass the red, or heat, rays, are eliminated, the chemical, or actinic, rays alone being utilized. The penetrating power of these rays is remarkable, it having been shown, by concentration, that they pass through the human cheek.

Whatever the theory, clinical experience shows decided benefits in its use. The patient notices relief in his cough. The expectoration is more free and easy. He sleeps better and breathes easier. All the secretory glands are stimulated and better digestion follows. Should there be any pleurisy pains they are quickly relieved. The blood is more perfectly oxygenated and repair carried on more rapidly. The sedative action of the blue light, or it may be its psychological effect, is conducive to quiet and restful sleep, a condition very essential in the treatment of tuberculosis.

Koch's tuberculin (new) is used in those cases that do not respond well to the open-air, dietetic and sunlight treatment. When not contraindicated, its careful application seems not only to hasten a retarded cure but renders the patient more immune from the toxins as well as germs of the disease. Herein, I believe, lies the great value of the treatment. It alone may eventually solve the secret of a specific cure. In its use experience, judgment and aseptic technic are essential factors, without which the best results cannot be obtained.

Pure mountain air all the time. It is not enough that the air shall be pure, but for best results it must be the dry, rare, ozone-laden air of the mountains. The more crisp, the better. Heat and moisture are enervating. Dry cold stimulates. The carbonaceous foods, the fat producers, are desired and well assimilated. Dampness and cloudiness go hand in hand with tuberculosis.

Only through ignorance from practical experience or selfish motives is the claim made that climate has nothing to do with the cure of this disease. The mistake lies in trying every known or heard-of remedy before advising a change of climate. Then, as a last resort, discarding all care and treatment, they expect climate to work a miracle. She does in some cases, but it is not giving the "old lady" a fair chance.

The open air or a special ventilated room, where the same air cannot be rebreathed, is imperative. In winter the temperature of the room should never be above 70°F.

The regulation of diet, rest and exercise can only be obtained where the patient is under sanatorium regulations. At home the overkindness of loved ones, and the frying-pan, are stumbling blocks on the road to recovery.

The continual stuffing of patients is a grave mistake. All food taken in excess of

what can be assimilated must act as a foreign substance; the toxins resulting from decomposition of this excess matter only adds fuel to the fever flame. At stool, the odor is terrific, and shows the folly of too much stuffing.

The lack of attention to diet, rest and exercise is largely responsible for many failures attributed to ineffectiveness of climate. The inexperienced physician says: "Go west; climb mountains; live on a ranch; rough it. Your trouble is only bronchial. You need no medical attention or further advice." This is the same old story told over and over again by patients who followed their own fancy, and a fool's advice, till exhausted by fever and starvation they stagger into the sanatorium-fold like hounded deer, the shadow of the undertaker close behind.

Why this useless sacrifice of life? When the sanatorium could have been of benefit, the patient felt he did not need its advantages. He regarded it as a place of last resort, not as a place in which to get well. He spent more money chasing over the country and buying everybody's cure than would have been the extra cost at a first-class resort. Then, no matter what good advice the physicians may have given, this class of patients must be compelled to do what is for their own benefit. Not one out of ten can be depended upon to do what is essential for a recovery. In hotels, boarding houses and private homes they do as they feel, not as they should in order that they might feel better. They live downtown, inhaling city smoke night and day; eat the cheapest of foods at restaurants; sleep in ill-ventilated rooms; keep irregular hours; exercise when the fever is at its height, and expect climate to effect a cure.

Climate alone, if given a fair chance, will make a cure in curable cases, but combined with rational treatment the results are more quickly gained and the risk of relapse or complications is almost wholly averted.

In conclusion, tuberculosis in any climate needs as careful attention as typhoid fever. The best results follow in that climate that is free from exhausting heat, dampness, foggy weather, but offering the greatest possible amount of sunshine. A dry, cold climate is better than a warm, moist one. The percentage of humidity should always be considered.

In favorable climatic conditions, with a rational system of treatment, enforced with a club if necessary, the disease is robbed of its terror. Thus situated, in the earlier stages, a positive cure can be effected.

In the face of twenty years' clinical experience, it is folly to say that there is nothing in climate. Colorado, with its yearly average of over 300 sunshiny days, with mild winters and cool summers, is the Mecca for tuberculars. Her brawny, deep-chested, native-born sons and daughters, the offspring of frail tubercular parents, attest the life-giving and developing influence of her air and sunshine.

With the first symptom of disease in the doctor's family, he seeks the genial climate of the arid West. He may preach to others that any climate is all right, but when "face to face" himself with the disease he is not long in making a change. No other city or state has as many doctors in proportion to population as have Denver and the State of Colorado, all of which goes to show the value of climate, and that, when combined with a regulated system of treatment, tuberculosis is a curable disease.

MARTIN W. PAGE.

Denver, Colo.

TUBERCULIN IN ITS FIELD

At the present time we should exercise the greatest conservatism in the use of tuberculin. Further experimentation, clinically, should continue.

At the Tuberculosis Dispensary, at Rush Medical College, we can report on over 1000 inoculations for the purpose of immunization, but we feel that we should continue our researches and not make our report until we can add another 1000 inoculations. The production of artificial immunity against tuberculosis in the human subject is the most recent application of our biologic therapy. The introduction into the human organism of stimulating bacterial agents is indeed a

rational procedure, proved by the overwhelming logic of experimental research.

The results already achieved in large clinical experience, by many workers, leave no room for the element of doubt as to the efficiency of specific medication as at present employed. The early experiments of Koch in the inoculation of guinea-pigs with pure culture of tubercle bacilli are familiar to us all. In the healthy cavy no local reaction occurs. There was apparent healing at the site of inoculation with the formation of a hard nodule, at the expiration of two weeks, and this usually was present until the death of the cavy. In tuberculous cavies there was skin necrosis, followed by superficial ulceration, which finally healed. Dead bacilli produced no constitutional disturbance when injected into a healthy animal. In the tuberculous there was prolongation of life. These experiments confirm the assumption that some immunity was acquired against reinfection and that the product of the dead bacilli exerted some specific influence.

In 1890, Koch's report on tuberculin was published and the remedy hailed throughout the world as a specific. The disastrous results following its careless, too hasty and general administration resulted in an era of widespread condemnation. The pendulum, however, swings again to a period of more conservative recognition of the value of tuberculin as a therapeutic agent.

Experimental research having demonstrated the possibility of conferring immunity upon animals by the use of attenuated cultures of tubercle bacilli has renewed our efforts in this field of research with the hope of achieving similar results in man. In the practical consideration of this subject we are concerned with two preparations, namely: Koch's old tuberculin and Denys' bouillon filtrate. The former is prepared from pure cultures of the tubercle bacillus of five or six weeks' growth upon 5-percent glycerin bouillon. The culture-media containing the germs are evaporated to one-tenth of their volume and filtered through porcelain to remove the germ. Old tuberculin contains *all of the soluble products* of the tubercle bacilli in a 50-percent glycerin solution.

Denys' tuberculin is prepared from the filtrate of bouillon cultures of the tubercle bacilli and contains all the soluble products elaborated by the bacteria while grown on bouillon. It differs essentially from old tuberculin in that no heat is used in its preparation.

In our clinical work at the Dispensary of the Chicago Tuberculosis Institute, at the Rush Medical College, we begin with small doses of tuberculin, at first 1-10,000 of a milligram, and gradually increase until we reach a maximum of one milligram. An important point in the administration of tuberculin is that the patient must be under absolute control. The Chicago Tuberculosis Institute has made provision for these patients taking their own temperature. They keep personal records and in that way tuberculin can be administered more intelligently. Patients receiving tuberculin should have their temperature recorded four times daily.

Relative to the production of artificial immunity the use of tuberculin is fully in accord with the modern theory.

Conclusions

1. In cases of pulmonary tuberculosis without temperature, and low resistance, its proper administration is of undoubted efficacy.

2. Tuberculin is capable of producing great injury to the patient and this injurious influence calls for the greatest discretion in its proper administration.

3. There is frequently increased cough and expectoration following its injection. This in itself is not an untoward symptom.

4. Persistence of such clinical manifestation as general lassitude and physical weakness should cause the discontinuance of its administration.

5. In the presence of a mixed infection with high temperature incident thereto the use of tuberculin is inexpedient. In pulmonary hemorrhage tuberculin is contraindicated.

6. The opsonic finding in dispensary practice are impracticable at this time.

Clinical study is absolutely essential in determining the size and frequency of the dose.

CLARENCE. L. WHEATON.

Chicago, Ill.

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[Dr. Wheaton, who is attached to the Central Free Dispensary at Rush Medical College, in behalf of the Chicago Tuberculosis Institute, has had exceptional opportunities for the study of this disease. His observations, therefore, are of great interest. They bear out the general sentiment among physicians of large experience that tuberculin is a remedy of decided usefulness. When the anticipations raised by Koch's discovery failed of realization the pendulum carried the profession too far to the pessimistic side. We are now beginning to realize *something* of the possibilities of tuberculin, whose value, both in diagnosis and treatment, is undoubtedly very great.—ED.]

VERBENA HASTATA AND SOLANUM CAROLINENSE

I am collecting materials for a report on the therapeutic properties and clinical uses of verbena hastata and solanum carolinense, and am especially interested in their use in epilepsy, with the special indications for their employment. I shall be glad to receive reports from all persons who have had experience in the use of either of these drugs, and to give due credit in the collective investigation report which I hope to publish in due time.

J. M. FRENCH.

Milford, Mass.

CLIMATES FOR INVALIDS

My experience and acquaintance with different localities and climates may be of interest to the "family." Circumstances have favored my desire to travel, and since I was old enough to remember I have seen quite a little of my native land. I have been back and forth from Maine to Florida, across the States to the Rockies, over the Gulf of Mexico and through the States except Texas, I have visited the White Mountains, Green Mountains, Catskills, Berkshire Hills, Alleghany Mountains in West Virginia, Rocky Mountains in Colorado, Blue Hills in New Jersey, and besides a large portion of the Island of Cuba.

I have been careful not to recommend a patient to try a climate I was not personally acquainted with. My first trip to Florida was eighteen years ago, at the time when I was a student, and last spring I came north again after nearly two years' sojourn down there. I have visited a number of places in that state from the northern line to the most southern point possible to reach by rail. Right here let me state I am not an invalid. I am enjoying excellent health and look so, and am in my prime.

I consider the southwest section of Florida, that is, on the Gulf Coast, the most desirable location. The climate remains about the same through the year. No sudden rise or fall of temperature, a balmy breeze blowing all day, and if it reaches you after passing through pine woods the aromatic odor is delicious! The Cuban climate is too damp, and the bane of the island is tuberculosis, while insects are multitudinous. Jejens (pronounced hay-hens; a minute fly), mosquitoes, fleas and bedbugs are forever active. Fleas and mosquitoes are found in Florida also, but they are not everlasting, have periods of appearing and disappearing.

There is not space for me to give a history of certain patients affected with diseases of the respiratory tract whom I know to have been cured by coming to Florida and living there. Tourists belonging to that class should not go into the large cities (Jacksonville, St. Augustine, Tampa) to live. There are many small towns which are surrounded by pine woods where they could live and thus have the full benefit of climate and comforts of living. Another class very much benefited by Florida air are neurotics and those who can never keep still. The air has a most soothing effect on tired nerves and aching brains.

In Colorado the climate is very different: bracing and stimulating to the point of making one feel as though he never wanted to keep still or sleep. I have never met such a lot

of nervous, overexcitable, restless, sleepless lot of people as I did in that region. I expect some of the people will pick me up on this statement, but I was in Colorado a year and a half and I studied climate and people carefully while there, and my record of cases confirms my statement. I found the physicians were always prepared for hemorrhages of all kinds. The insane asylum I visited was overcrowded with patients, many of whom appeared to me to be suffering more from the effects of rarified altitude than anything else. I never had such an experience with babies who wouldn't sleep and showing signs from birth of cerebral excitability as here. I saw men and women several times, dead or apparently dying, at Pueblo, who had been taken off the trains that had crossed the Rockies. People with weak hearts and hemorrhagic pulmonary tuberculosis should keep away from high, rarified altitudes.

Colorado is full of people whose lives have been prolonged and health restored by coming there. Many, many have died on account of making the change to a climate which was death to them, which might have been prevented had the physician known the climate and his case, as he should. More than once have I heard the doctors there "damn the eastern blockheads" for sending them a corpse.

When the time comes that physicians over the country understand climatology and their cases, we shall not see such awful mistakes. I have never seen or heard of a case of hemorrhage or weak heart giving out in Florida after once the patient began to feel the climatic change. The climate there seems to have the tendency to retard such a catastrophe.

In the West the alkali water is very obnoxious and injurious to many. In Florida the sulphureted-hydrogen gas in water is obnoxious, but does not produce the results alkali water does. All artesian-well water in Florida has more or less of this gas, but after being aerated it tastes and smells all right. I think St. Augustine water has a greater supply of sulphur than any city or town water I have tasted in the state.

I noticed one of the writers for CLINICAL MEDICINE speaks of "fine water" in Florida. I know most of the visitors to Florida wouldn't agree with him, although there are excellent mineral waters in certain sections which have a most beneficial effect in diseases of the kidneys.

Florida climate is the one above all for elderly people who dread the northern winters, and a certain class of patients, but tuberculosis patients and all those showing symptoms of pulmonary disease are rapidly being debarred from entrance to hotels and boarding houses. Therefore those who have no winter homes there or friends who will accommodate them are in a dilemma. Contributors to THE CLINIC invite invalids to come to Texas, but I read in one of the papers last winter that Texas had closed her boundry line to tuberculosis cases. States are rapidly making arrangements to segregate and treat this disease. So far as I know Florida has not taken state action, and there is not a tent-colony or any place in the state set aside for the accommodation of such cases entering it.

Most of our pulmonary and asthmatic cases are from New England and the northeastern states. These people dread going so far away as Texas, Colorado, the Pacific Coast, etc. What is more, the majority of them have not the means. Florida is the nearest point and the cheapest. On the three lines of steamers that sail from Boston, New York, Philadelphia or Richmond for ports in Georgia and Florida tickets cost from forty to twenty dollars for the round-trip. The railroad fare from Jacksonville to points on the East Coast and Gulf Coast vary according to distance.

The feeling is strong against physicians coming to Florida to spend the winter and collecting fees from patients whose local physician has to take a back seat during the season when he expects to make the best collections and do a good business. The State has stopped it by appointing a medical examining board which will not accept diplomas from other boards and demands an examination before giving a license. Those who come to the state prepared to invest and

help promote its interests may receive recognition and favors which a transient will not.

I have an idea which I may never carry out, depending entirely upon how much of a necessity it is and its practicability after I thoroughly investigate the attitude of the medical fraternity and the State with regard to it. This is no money-making scheme either. It must support itself if possible.

I own three hundred and sixty acres on the Gulf Coast in Southwest Florida. Part of the land is under cultivation and part pine forest. It is on the edge of the hunting district. A fast-running, clear-water, high-bank stream, affording excellent fishing, passes through the property. Good market and railroad not far away. It is an ideal location and climate for all cases belonging to the classes previously mentioned.

If I do decide to use some of this property for the restoration of such invalids to health and happiness, my plan is not to provide hot baths, massage and every luxury and means to keep patient constantly reminded they are sick, but they shall be made to stay in the sunshine and work in the sunshine, and every means possible will be employed to keep them happily busy and embued with the understanding that they will find health and strength where nature is ready to give all that is demanded.

Mental therapy in connection with other medical and physical treatment I believe in thoroughly. My plan is to have a place conducted on the most economical and healthful basis possible, where a certain number of charity cases can be accommodated; others to be charged from three to eight dollars a week. For those who wish to settle or rent ground to live on, government land for homesteading and other land at any price they wish to pay can be bought.

Florida is progressing rapidly in every way, and has a future. Agriculture along lines which were considered not possible a few years ago is showing remarkable results.

C. H. WIKLE.

New Milford, Conn.

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[In a later letter, Dr. Wikle adds: "Action for organized treatment and the prevention of tuberculosis has begun in Florida. I have received a letter and a paper from one of the physicians in Florida giving me a full account of what is to be done in that line. Dr. Ellen Lowell-Stevens, of Jacksonville, Florida, attended the Tuberculosis Convention in Washington. She is at the head of the movement which the Health Department of the Florida Federation of Woman's Clubs is interested in."—ED.]

INSIDE "SANITATION" FOR TUBERCULOSIS

We have been greatly interested in an article written by Dr. Nevin B. Shade which appeared in the January, 1909, number of *The Medical World*. In this article Dr. Shade reviews his method of treating tuberculosis with calomel, a method which he introduced in 1891, and which he has employed in the treatment of many cases of consumption, some of them of the malignant type, with a very large degree of success.

Dr. Shade insists upon the importance of giving special attention to the condition of the intestinal canal—more attention to this part of the body than to the lungs. We agree with him. Dr. Shade says that "a sanitary condition of the alimentary canal produces immunity to tuberculosis and other infectious diseases," and he furthermore makes the statement that "as soon as we teach the people, the young and rising generation, that a sanitary condition of the inside is more important than the outside of the body," we shall be able to reduce the mortality of consumption from 50 to 75 percent.

While living out of doors, fresh air and cleanliness are desirable for the consumptive, they are no more essential, in Dr. Shade's opinion, than in the treatment of any other disease. Given a correctly functioning alimentary canal, and any tuberculous germs which may find their way into it will be destroyed by the normal secretions and therefore powerless to do harm. The doctor says that if we can keep the stomach and bowel in good condition the individual is practically immune from infection by the

tubercle bacilli. He is so convinced of this that he would be willing to take a capsule of tubercular sputum every day for thirty days to demonstrate that he could not be infected in this manner.

While we have not as much faith as Dr. Shade in the specific value of calomel followed by the morning doses of salines, yet *we do believe* that this or some similar method of cleaning out the intestine and keeping it clean is important and in many cases *essential* to the successful treatment of tuberculosis. The fresh-air treatment of tuberculosis, while of value, has become too much of a fad, and in following out this fad too many physicians have overlooked many factors in this disease and especially the importance of attending to the digestive canal. We agree with Dr. Shade that this is the thing most important. If we can keep the bowels free from fermenting and putrefying matter, maintaining its secretions in a normal condition and aiding the stomach to do its work properly, we can treat a vast majority of our consumptive cases with success, providing they are taken before the disease has advanced too far. A normally acting digestive canal means normal assimilation, good nutrition, no absorption of poisons from the bowel to add to the toxemia of the disease, natural elimination of waste.

Never, *never*, Doctor, forget that the keynote to the treatment of consumption is *nutrition*—and that means: watch (and help) the *primæ viæ*. "Clean out, clean up and keep clean!"

HARELIP AND ARRESTED DEVELOPMENT

In answer to Dr. E. S. McKee's enquiry about "heredity and harelip," on page 457, April issue, the following may be helpful.

Twenty-five years ago the directors of the Zoological Gardens, London, England, were much annoyed over the obse vation that all the lion whelps born in captivity had cleft palates, could not suckle, and therefore died of starvation. Their medical officer, Bland-Sutton, was asked to investigate and report upon preventive means. After carefully examining a number of immature and unborn young of the domestic cats, he advised that the meat-ration of the pregnant lioness be *doubled*. Result—perfectly developed whelps were born ever after.

His investigations satisfied him that harelip and cleft palate were cases of arrested development due to insufficient nutrition. The success of his suggestion proved the correctness of his view.

In 1887, while surgeon on construction work of the Manitoba, Minneapolis R. R., west of Minot, I saw a family in which the mother and four children all had harelip, and the environment warranted the belief that Bland-Sutton's treatment would have prevented the children from sharing in their mother's defect.

A. S. THOMPSON.

McDonald's Corners, Ont.

DEATH OF DR. F. A. A. BELINGE

We are sorry to learn of the death of one of the oldest subscribers for CLINICAL MEDICINE and one of the most earnest disciples of dosimetry in this country, Dr. F. A. A. Belinge of San Francisco, California. Dr. Belinge was a friend and correspondent of Dr. Burggraeve, an honorary member of the Dosimetric Medical Institute of Paris and a frequent contributor to dosimetric literature. For many years he has been a reader of CLINICAL MEDICINE and an honored member of the CLINIC "family." Thus the members of the Old Guard are passing away.

COMMON-SENSE GYNECOLOGY

There be those turned out of our medical colleges today who do not know any other treatment for maladies of the female generative organs than that laid down by some work on operative gynecology. That certain of these cases will yield readily to remedial measures other than the knife they never heard. Poor mortals, they are not blamable, it's their teaching. But the men who set themselves up as leaders in scientific thought, they are the chaps that are going to have a hay-wagon load of

sins to answer for if there is any answering done.

The particular method of treatment that I employ is of very little consequence. The man who reads occasionally will be able to devise a system of medication that is as good as mine any day. There is nothing in the world that I know of to prevent him. It's these fellows who have been for the last hundred years playing the game of "follow your leader" that have put the medical profession in the position that it is in today.

Get in and do some original thinking and quit, for heaven's sake quit taking somebody's word for everything. I admire the man who first ate a tomato. The wise ones told him for years that if he ate one it would surely kill him. They had never tried it, but some other wise one who lived before they did told them so, and they in turn passed the lie along. That fellow kept thinking it over and wondering if a tomato would really kill him if he ate it. The longer he thought about it, the more tempting the thing became, just like the boy told not to eat the jam, until at last he said to himself, "Well, hang it, I don't believe the thing is poison, and I'm going to take a chance at it once, anyway." He did, and the world now eats tomatoes. The man who trails along in the wake of some other fellow and accepts as the laws of the Medes and Persians everything that fellow utters is going to miss some mighty good tomatoes in this world.

Once upon a time, not so many, many years ago, either, a wise man said, "Clean out, clean up, keep clean." I could tell you that fellow's name, if I wanted, but it isn't at all necessary. He didn't say it with regard to women especially, but it will apply. Did you ever pause long enough to remember that the female who comes to you with a history of menstrual difficulty, backache, headache, and several other aches including a heart-ache, was as constipated as an owl? Verily, I trow not, for chances are you were busy searching with digit and speculum for something to cut out. And you found it, too. That goes without saying. The man who is hunting for a job of that kind gets it, just as the man who hunts for an excuse to take a drink the second morning after a New Year's resolution can find it.

In my own practice I personally take that same woman and try just as hard as I can to find a means without cutting anything out. I can find plenty of things to remove, but the deuce of it is that I can't find anything to replace them after they are gone. Therefore, I endeavor to leave them all in the position where they were placed by the Creator, or Darwin's great-grandfather, just as you choose. I generally locate the trouble in such a manner as to avoid the knife. Then I pursue a course that will not only relieve the woman of her distress, but will allow her to go forth as she was formerly, minus her aches and pains.

I just now said something about constipation. Who was it once defined woman as "a constipated animal with a pain in her back?" I don't know, but he was not a great many miles off the mark. I have (and you have, too) had women come into my office with the most gloomy history possible; why, Fox's 'Book of Martyrs" would be a George Ade yarn beside the story they tell.

"Yes, yes, my dear lady, I know your menses are irregular, and your uterus is flopped bottom side up, and your ovaries are all covered with barnacles, and your fallopian tubes are tied in true lover's knots, but I know also that your bowels are more feculent than the cloaca maxima, and your system is as full of toxins as a negro's 'coon dog is of fleas, and your liver has gone on a strike, and your stomach has balked, and several other things that you have not told me, because you got the idea into your precious little head that you were a victim of the humanity of man and had to have an operation. That last is true, you've got to have an operation, but the operation will not consist in stretching you out on a table and trimming off divers and sundry of your essential organs, not in the least, madam, your operation will be far less expensive, though almost as rare. You are going to have an operation of the bowels."

And she does, if she remains in my care long enough. She has a few other things as well, and when I bow her out of my office for the last time, she feels better than she has for centuries.

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[This is something that our old and good friend, Dr. Charles S. Moody, of Sand Point, Idaho, contributed to *The Annals of Gynecology and Pediatrics*. It's the right kind of talk! When a few more doctors learn the value of "clean out, clean up and keep clean" there won't be such an overpowering necessity for quarreling over the fee-splitting problem. The patients will stay right at home—and under the care of the family doctor have their "operations" in the good old-fashioned way. Just read again Dr. Zeichert's dandy little poem in the February number, "Take a Pill."—ED.]

FINNISH DOCTOR WANTED

There is a colony of about 300 Finlanders and their families here who want a Finnish doctor, or one who can speak the Finnish language. It is a good place, especially for a young man. If you know of one send him to Rocklin, California.

J. C. FORD.

Rocklin, Cal.

SEVERE INFECTIONS CONTROLLED

Case 1. Called Feb. 20. Little girl, age 4, delicate; tongue, yellowish white coat; both tonsils inflamed; dry hacking cough; temperature 102° F. Treatment began with thorough elimination, calx iodata for the dry cough, an antiphlogistic plaster externally, throat and tonsils sprayed frequently with a solution of benzothymol.

On Feb. 21 the cough was better; bowel thoroughly emptied; temperature about 102°F.; inflammation now extended to middle ear, also to parotid and to other cervical glands. Eliminants (saline) repeated. Began with the three sulphocarbolates (for intestinal antisepsis) echinacea, gr. 1-2, and calcium sulphide, gr. 1-4, every three hours.

On the 22d a herpetic rash appeared on the child's back, lasting throughout the disease. On the 23rd all the symptoms were improving slowly. Treatment continued practically as above, with the addition of bovinine as food. The ears, which had begun discharging pus freely, were thoroughly cleaned.

On the 29th the patient was convalescing nicely, and was discharged, being kept, however, on the arsenates of strychnine, quinine and iron together with nuclein, and some prepared foods easy of digestion.

Case 2. Little boy, 2 years of age, brother of the above little girl, taken sick the same day and with practically the same symptoms. The treatment instituted was the same, making allowance for difference in ages. His bowels and kidneys did not very readily respond to eliminants, but by keeping everlastingly at it we had the pleasure by the 29th of seeing our little patient clear of fever and seemingly on a fair road to recovery.

On March 1 (tenth day) his temperature unexpectedly ran to 103.6°F. The abdomen was somewhat tympanitic, pulse 140, respiration 45, liver and spleen enlarged, in fact, the whole glandular system seemed involved; the child was very restless, noticed nothing, all the time having a plaintive, whining cry.

Dr. Franklow was called in consultation. We decided to continue the previous line of treatment with addition of turpentine stupes over the bowels and oil of turpentine internally, also to increase the echinacea and calcium sulphide as rapidly as possible. For the fever I gave a combination of acetphenetidin, acetanilid, and caffeine, which had to be frequently repeated as the fever was hard to control, owing to the great systemic infection.

The child slowly grew worse, pulse going to 160, respiration to 60, temperature 104.8°F., pus discharging from ears and nose, with every symptom pointing to a fatal result, except that the heart's strength was holding up well.

We pushed our eliminants, ran the echinacea to 1 grain and calcium sulphide to

1-2 grain every two hours, and gave strychnine and nuclein to keep up the vital forces. On March 11 a slight improvement was manifest and by the 21st all glandular enlargements were relieved, and pulse, temperature and respiration were normal. Echinacea and calcium sulphide were gradually reduced. The three arsenates and nuclein were g ven, and proper diet instituted.

I may be wrong, but I believe the good results in these cases, especially of the little boy, were brought about by the use of echinacea and calcium sulphide; aided, of course, by the other measures and medicines employed.

I have not been able to describe these cases, especially of the little boy, in a way that gives any adequate idea of their conditions. That of the boy developed into what I consider one of the most desperate cases I have had in seventeen years and which ended in recovery. The tonsillitis was the easiest part of the disease—the trouble being the general systemic and glandular infection. The boy weighed one pound heavier than the girl, yet I made the mistake of giving him about half the size dose that I d'd her, and to this I attribute the serious condition which developed in his case.

Some two and a-half years ago Dr. Franklow (my consultant in this case) had three cases similar to these. All died. He is an up-to-date physician, but neither of us knew so much about echinacea and calcium sulphide n septic conditions at that time as we do now, and they were not then employed.

W. E. KIDD.

Richards, Tex.

[I have only congratulations on the admirable manner in which these two cases were treated. It is my firm conviction that under any other treatment the boy would have died, and probably the girl also. The profound systemic infection was met by systemic antiseptics, and when the response failed these were pushed to dose-enough. That is *real* clinical medicine. We wish we might have more of these case reports from our readers.—ED.]

RECTAL FISTULA: "THE NONSURGICAL TREATMENT"

Among the many good things contained in the January number of CLINICAL MEDICINE I have read with much interest Dr. Pennington's article on Rectal Fistula. This baneful disease has caused me much trouble, and while recognized as a surgical malady, yet some cases will be found which will be amenable to proper local and constitutional treatment, and to give the synopsis of such a case is the object of this report.

On the 10th of November last I was called to see James Underwood, "Col." The messenger reported to me that Jim had the piles and had quit work and gone to bed. On arriving at his house I made an examination of the patient and found that Jim had not made a correct diagnosis of his case, for instead of piles I found a well-developed case of fistula of eight or ten months' duriation. Jim was a farmer 28 years old and of fine physical mold. From the history of the case and conditions then existing, I knew that the fistula was complete, that it communicated with the rectum. There were two sinuses, lateral, about equidistant from the anus. The entire area was very sensitive and all symptoms then indicated the forming of an abscess—posterior to the anus.

For torpidity of the liver, constipated bowels and locked secretions he was given calomel and podophyllin, to be followed by magnesium sulphate. I saw the patient again on the 12th. The medicine had acted well, had cleaned him out; Jim was feeling better and looking more cheerful; complained only of some pain about the rectum. On examination I found that the abscess had formed.

It was very perceptible, the surface was convex and the apex fluctuating. This point I incised. The flow was profuse and the odor —well it was fecal foul and fetid so that in a few moments the room was vacant of all persons except myself and patient. By gentle manipulation the cavity was soon drained of its contents. I then prepared to

divulse the sphincter, introduce the speculum, and wash out and sterilize the cavity, preparatory to any operation which might suggest itself—but here the patient drew the line and emphatically refused to submit to such a procedure.

These people are mostly illiterate, ignorant and superstitious, and while they very readily take any medication, be it ever so nasty, they are suspicious and afraid of any procedure which involves an instrument. Even the women are skeptical and averse to the use of the forceps in labor and usually will not consent to their application until they are physically exhausted. My patient having refused every suggestion made to alleviate or better his condition by operative process, there was but one alternative—that was constitutional medication.

I selected calx iodata, the remedy *par excellence* for systemic dyscrasias. I instituted the treatment that evening by giving him calomel and podophyllin, 1 grain of each every hour for six hours, to be supplemented by a dose of saline laxative. After free purgation he was given a good-sized dose of the three sulphocarbolates as an intestinal antiseptic, repeated every two hours during the day until the indications were such that the interim between doses should he increased and the medicament eventually discontinued. The calx iodata was given morning, noon and night, and I left enough of this preparation to last the patient ten days. For tonic treatment he was given iron, arsenic and strychnine, three times a day after meals.

I did not see the patient again until twelve days after my last visit. Reports indicated that he was doing nicely. When at the time stated I met him he was driving a team and had also been picking cotton for two days. After expressing his gratitude to me for my work, he said, "Yes, Boss, I is a well nigger." Today, the 15th day of January, he is fireman of the big engine which drives the 80-saw cotton gins for the plantation.

To the "family" and all those who are familiar with the alkaloids and the many good preparations that are included by those who practise this system the result of this report will not be surprising, for it was from a former number of this journal that I gleaned the manner of treatment which I applied to my patient.

To those who know not the efficacy of the alkaloids in the treatment of many of the diseases to which we are heir I can only say that while they are passing through life in the capacity of medical practicians, they are in close proximity to and passing by unheedful many a fragrant blossoming oasis and rich and sparkling nugget.

W. J. LANE.

Greenwood, Miss.

A REPLY TO DR. RITTENHOUSE'S ARTICLE ON THE FIRST STAGE OF LABOR

It is just possible for one to do a great amount of harm in trying to do good, and this I think what Dr. Rittenhouse's article is capable of doing. The doctor tells you that this is no day for waiting, even in the first stage of labor, but advises interference in certain cases by early rupture of the membranes and dilation of the cervix with the fingers. I contend that if you admit that Dr. Rittenhouse and some others can skilfully do this in properly selected cases, it does not argue that all could recognize the suitable cases and properly perform this work.

If I were to give advice to a young physician of what I deem the most important, it would be to give the woman time and to interfere only when the powers of nature failed or a more dangerous symptom than mere pain threatened the woman. I should say to him that he need not look for or expect to even up all cases with any kind of treatment, for just as some bear grief better than others so it is with pain. Some just simply have a worse time than others and others just simply carry on a great deal more for the same pain; and that pain is one of the essential elements in the case, and as long as the pains are good and regular, just wait.

I tell you, no matter who may take issue with me, I am convinced that more harm is

done in the lying-in-chamber by haste and unnecessary manipulation than by sitting by and doing nothing. I believe that many mothers today are resting in the cemetery just because of hasty, and probably very unnecessary, work on the part of the physician. I take the position that labor is a physiological process, with nature the principal manipulator, and that he is the best physician who can best imitate nature. You can not hope to do better work than nature, but you can, as a matter of fact, do quicker work.

The Doctor says that it would be a great boon to suffering womanhood if an anesthetic could be found which would lessen the agonies which some women have to bear during the first stage of labor. Yes, I think, too, that if the Creator had thought best He could have made woman so she could have been a mother without any pain, but it seems that best was done in everything in the beginning.

The Doctor says he gives 4 to 6 grains of quinine to aid pains, and while he has had twice the number of years in the practice that I have had, I want to tel him that if he will give quinine in doses of not less than 10 to 15 grains he will find it better and without harm, during or after labor. Also, if he wants an anesthetic for the first stage of labor that will save some pain and do no harm, just give chloral in 15-grain doses every twenty minutes for three doses in the first stage of labor, and at wider intervals thereafter. The mother expects you to give something anyway, so just give chloral and quinine, besides keeping the patient clean with bichloride washes, repeated if the labor be protracted.

Further, I give an enema to every parturient woman, no matter whether I am told that the bowels have moved well; and in some of these very cases clots are passed. The enema cannot do any harm, and if you suggest that it is being done to ease her pains —which is true to a certain extent—she will be more than willing to have it done. It will not do to take the women's word in all these cases. I also see to it that the bladder is empty, in every case, by the use of the catheter.

Mind you, I do not advocate doing nothing, but, rather, I believe in doing much, only not that which nature should do. I do not believe in rushing through with a labor-case, and when I am tempted to take the case away from nature I always feel that my patient would be about as well off treated with more time. There are several things which I admit are in favor of the active method in obstetrics, such as getting home quicker, making an impression on those present that we understand our business, and that an effort was at least made to relieve the suffering woman, but when we are thus tempted to hurry through the case we must realize the harm that might accrue from this undue haste.

To sum up, my method would be this: Keep the patient clean by the free use of bichloride washes; quinine in 10- to 15-grain doses; chloral in 15-grain doses every twenty minutes for three doses in the first stage and at longer intervals thereafter; chloroform the latter part of the second stage; use forceps and other methods *only* when nature fails. Do not do too much but give plenty of time in every case. Dr. Rittenhouse spoke of using the finger-nail in rupturing the membranes, but in my experience the finger-nail is so soft and soaked with the fluids that it fails me, and I resort to an aseptic instrument.

F. L. Bott.

Lexington, Miss.

INDEXING, PNEUMONIA, HYSTERIA AND OTHER THINGS

In the April Clinical Medicine, p. 582, Dr. Wm. P. Allen discusses filing of clippings and the editor advocates binding of journals.

I like the idea of binding journals, but it is costly. I have probably a dozen bound volumes of medical journals. In time I hope to bind others, but until I do I keep them in boxes in the cellar, standing on end so that I can easliy draw out the journal I wish.

I do not like to mutilate any journal, so card-index the articles I desire to refer to. I think that is the ideal way to handle the

problem. I also card-index reprints that interest me. It seems to me that once one becomes accustomed to card-indexing he finds ever more uses for it—taking histories, keeping accounts, etc.

Now for filing the cards. One may file subjects under the letters of the alphabet or under such subjects as "Medicine," "Surgery," "Obstetrics," etc. In using the latter method, one can elaborate, as "Medicine," "Medicine—Alkaloidal;" "Therapeutics," "Therapeutics—Alkaloidal;" "Gynecology," "Gynecology—Medical;" "Gynecology—Surgical," etc.

In the March CLINICAL MEDICINE, page 269, Dr. Moody told of using hot "flapjacks" in pneumonia. I believe the mustard-plaster and cotton-batten method better, using the mustard to give a pronounced redness to the skin as often as necessary to relieve pain, wrapping after each application with cotton batten over the whole chest and covering with a shirt or band or a jacket made for the purpose.

For hysteria I have also used apomorphine hypodermically with fine results. The first patient, a young woman, was said to be dead by the boy who came for me. I recognized the condition immediately and gave a hypodermic injection of apomorphine, gr 1-20, then told the husband to have a basin ready as she would vomit soon. In a few moments she began to show signs of life, shortly afterward vomited an enormous amount of partly digested food. After that, in a very short time the woman was all right.

In talking with doctors one is struck with the fact that many city physicians think that country practice is preferable, and the country practician thinks that city practice is a "cinch." Why would it not be a good scheme to establish an exchange so that these men could exchange practice for two weeks or a month so as to get a practical idea of conditions as they are met with in country and city practice?

The June CLINICAL MEDICINE will be looked for with much interest, I'm sure—I know *one* who is anxiously waiting for its "good things." I like to see photos in CLINICAL MEDICINE, especially of homes, offices and vehicles used by physicians. These interest the wife too.

C. F. ABBOTT.

Elmira, N. Y.

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[All of Dr. Abbott's suggestions are "A No. 1," and we hope he will send us more—many more. What do the "family" think of the exchange idea? If any of the brethren want to try this method of taking a vacation—even if they want to make it permanent—the services of the editor are at your service and he will do the clearing-house act to the best of his ability. Glad you, and the wife also, like the pictures, Doctor. They seem to meet with general favor, though once in a while we get a "kick" from someone who thinks them a waste of space.—ED.]

PUERPERAL SAPREMIA AND PNEUMONIA

I have had some, to me, very gratifying results with the alkaloids, among these being one case of puerperal sapremia (I think not septicemia), a sequel of a granny's work. Temperature 105°F, pulse 140, and all indications of systemic invasion, or infection, if that's better. The uterine douche with hot normal saline solution, defervescent compound, calomel and podophyllin, echinacea and calcium sulphide did the business.

I have just read a brilliant report of Pryor's operation for puerperal septicemia. No mention of any antipurulent remedy was made. How unfortunate we poor fellows away out in the country are with only the "clean-up, clean-out," with the defervescent compound or dosimetric trinity as indicated, and such "larvated suggestions" as go with echinacea, calcium sulphide, common salt, etc. We miss all of those brilliant operations.

Now, I am not at all hypercritical. I want the best and want my brother and most emphatically my parturient sister to have the best; but really, Doctor, a lot of the pseudo-therapeutic nihilism makes me wonder why things are as they are.

I didn't have a case of pneumonia last winter, a year ago, though I had several cases where the folks feared it; there were chill, cough, bloody sputum, fever, etc., but

calomel, podophyllin, and the defervescent compound robbed me of a bill every time and disappointed (?) the folks.

But I have it this time. Two patients in one family, aged 5 and 6. Sick four days before I saw them. Had pneumonia if I know what that is, and I think I do. I went four times and wanted to quit, but they insisted on two more visits and the children were up and around in two or three days more.

Two more cases in another family! Girl of 13 with pronounced lobular pneumonia. Alkaloidal treatment resulted in normal temperature in four days. Boy of 5 then needed attention. Not so bad, but I saw him three times. These cases may not have been pneumonia, but if they were not, I can't diagnose a case.

I want to add just one more: Mrs. V., being of a hemorrhagic diathesis, suffers from menorrhagia. In December I called in a brother doctor, who curetted. I had tried atropine and hyoscyamine, ergot and calcium chloride, without results. Two weeks ago her trouble returned but this time after another failure of atropine the bleeding yielded promptly to ergotin.

B. T. VAUGHAN.

Cement, Okla.

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[It is evident that this was a case where the hemorrhage was due to relaxation of the uterine fiber, and the indicated remedy was ergotin, which condensed this tissue. This is a very important observation, showing that atropine is not simply a hemostatic but that it acts as such when the hemorrhage is of a character to indicate its use, as ergotin was clearly indicated here. We must not neglect to appreciate the pathologic state back of the symptom.—ED.]

A PRACTICAL METHOD FOR INDEXING MEDICAL LITERATURE

Following out the idea suggested by Dr. Wm. B. Allen in his note on preserving clippings, on page 582 of the May CLINIC, I believe I have a system which is even an improvement upon his valuable arrangement.

There are two classes of periodicals which come to the desk of every live physician: the solid ones, to which he can refer with some feeling of authority and which he must preserve entire; and the more or less ephemeral class, which includes some of the periodical advertising sheets sent out by some drug houses. This latter class may and indeed should be mutilated, to winnow the grain of wheat from the ton of chaff, but we must know where to find the grain of wheat when we want it.

This is my system. Ten periodicals come regularly to my desk, and sample copies of others, besides an average of twenty to forty bulletins, reprints, and circulars weekly. All these must be fully worked over, not read, page by page, for there would be no time left for other things, but indexed. I have a set of pasteboard boxes in a case, lettered with the name of a general subject on the back, as "Sanitation," "Tuberculosis," "Therapeutics," etc. I also have a card index, with cards 3x5 inches. All these I made myself in odd minutes.

When a periodical comes to my desk, if it is to be preserved I look over the table of contents for articles of particular interest to me. I find, for instance, one on "Gonorrheal Prophylaxis." This is not cut out, but listed in the card index under two headings—"Genitourinary Diseases," and "Social Problems," as I may want it in either line. I list volume, page, and title of the article.

If the article is in one of the ephemeral journals I cut it out and file it in the box marked "Social Problems," indexing it also under "Genitourinary Diseases." The boxes are numbered as well as labeled to facilitate reference.

If the article is on the *treatment* of gonorrhea by some special drug it goes into the "Therapeutics" box and is indexed under the name of the drug and also under "Gonorrhea." (I have two cards in the index closely filled with references, and reprints and clippings on this disease.)

Reprints and circulars fall readily into two classes, the meat and the trash, which are easily distinguished. The trash goes to the

waste-basket instanter, the meat is masticated, and filed for digestion.

Work over your material immediately upon its receipt. If you let it accumulate for a month or two the chances are that, if you are a busy man, you will, in despair, clear your cluttered desk by consigning *all* to the flames, and thereby you may lose a point worth hundreds of dollars to you.

When I see reference made to any article, reprint, or circular or bulletin which it appears will be of value to me, I write *immediately* to the author, company or board which can supply me with the needed material, and have thus added much of value to my library which otherwise I should never have seen.

When I find an article of especial value on some particular subject in one of my textbooks, I note it in the card index, giving author, edition and page. When the "pan-out" gives only a grain of gold, two or three pregnant lines, I cut the bit out and paste it in my textbook under the proper heading. I thus keep my files free from small slips which are an annoyance and easily lost, and still have all my material at my finger-tips, for my textbook articles are indexed too.

Thus, when I desire to determine how much material I can find in my library on the subject of the "Therapeutics of Phenol" or on the "Disposal of Garbage," or whatever the subject may be, I take out my card index under the proper heading and in a few moments my array of facts is before me. I am endeavoring to make of my mind not an encyclopedia, but an index.

For the physician with a smaller bulk of material to handle Dr. Allen's filing case may well take the place of my boxes; but the card index is indispensable.

Having begun this system for classifying my medical knowledge, it has pleased me so well that I am extending it so as to embrace my general reading and studies, and I feel that it has increased my studying and writing capacity from three- to five-fold, with corresponding benefit to my practical efficiency.

That I keep a systematic record of cases, with uranalyses, diagrams of examinations, etc., goes without saying in this day of exactitude in medical practice, but "that is another story," as Kipling says.

If I can be of any service to any of the brethren in helping them to solve the classification problem I shall be only too glad to do so, for it appears to me that a small store of knowledge well under command is of far more value to the world than a mind full of heterogeneous information, through which the possessor must paw to find the fact he wants, and then run ten chances to one of not finding it.

GEORGE B. LAKE.

Wolcottville, Ind.

SEND IN HELPFUL HAPPENINGS

Dr. Frank Pollard of Garberville, California, suggests that it would be a nice thing if our readers would send in, from time to time, some of the ideas which they have picked up in various ways—mainly clipped from other journals—and found good. These ideas could be reprinted in CLINICAL MEDICINE for the good of the "family" and might be made to yield a vast amount of helpfulness to all of us. Better still, take the "helpful happenings" out of your own experience and tell us the story "in twenty lines."

TREATMENT OF SCARLET-FEVER

The treatment of scarlet-fever as taught by our textbooks I believe has not changed much in the last fifty years; and the article outlined by Dr. V. E. Lawrence, page 293, CLINICAL MEDICINE for March, calls this forcibly to my mind.

Fortunately or unfortunately I have passed through several epidemics of this disease, and I will briefly describe my treatment. When first called to attend a case of scarlet-fever, I observe the character of the patient and the eruption. If the patient is drowsy, pupils dilated, strawberry tongue, hot sweat under the clothing, jerking into consciousness with crying or screaming, full, bounding pulse in carotids; smooth, shining, red skin (Sydenham variety), all showing a deep toxemia, especially directed against the

nervous system, there is nothing that can take the place of belladonna, five drops in half a glass of water, a teaspoonful given every thirty minutes.

If the patient, within the first twenty-four hours is highly excited, afraid of death, restless, with high fever, high-tension pulse, skin hot as a pepper-pod, there is nothing like aconitine, the usual dosage.

Phenolphthalein sufficient to cause free catharsis is given, followed by the sulphocarbolates until the stools become inoffensive. Albumen water, barley water, orange juice, lemon juice, thoroughly cooked rice and oatmeal should be the diet.

Then one tablet of a special formula I have prepared for my personal use is given every three hours. It contains capsicum, gr. 1; myrrh, gr. 1-2; echinacea, grs. 2. Chocolate coated. No greater stimulating antiseptic and toxin destroyer has ever been compounded so far. Try for yourself and be convinced.

The treatment of the skin is to keep it thoroughly oiled with a neutral oil. In the country I have a quart of lard boiled for an hour in a kettle half full of water, to which has been added a little sodium bicarbonate. Let it set to one side till cool, then skim off the top lard. This should be rubbed freely into the skin all over the body. In some cases when the fever is high it will be necessary to repeat every hour or two. Once a day the skin should be bathed with a hot solution of sodium bicarbonate, and then the oil applied again. When desquamation commences it may be hurried and also the scales sterilized to a certain extent by applying a liberal wash of 3-percent solution of peroxide of hydrogen before greasing.

Where patients get wild, want to get out of bed, pick at bedclothes, see ghosts, and are totally oblivious to person, exposing the same without shame, nothing has helped so much as hyoscyamine, gr. 1-1000, every hour or two hours. Mustard draughts applied to the lower region of the spine, calf of leg and soles of feet, to redness, modify mental symptoms materially. With this treatment success has perched upon my banner so far, without complications or bad after-effects.

A. E. COLLYER.

Elgin, Nebraska.

[Dr. Collyer calls attention to the value of the powerful stimulants that arouse the vital forces when in danger of being overwhelmed by the onset of disease, and bring about reaction. He describes a very important emergency that demands recognition and swift and effective interv ention. —ED.]

BURNS AND COLDS

Apropos of discussions as to treatment of burns and common winter-colds, while my suggestions may be neither new nor novel, as I have not observed them mentioned and they have given me excellent results in many cases, they are here offered for trial and will, I am sure, be found to give satisfaction in very many cases.

For burns, cleanse the wound, then apply a dressing of

Boric acid	drs. 2
Vaseline	oz. 1
Lanolin	oz. 1

Spread the dressing on thick-meshed gauze and apply.

This relieves the pain almost intantly, and promotes healthy healing with minimum of scar. The dressing may be renewed as often as the case demands; the less frequently it is disturbed the better, but that must be determined by the amount of exudate and slough. It does not adhere if used thickly enough, so causes no pain or injury to granulating surfaces when being taken off. I have used it in very severe and mild burns and in scalds with great satisfaction.

For a common cold, if taken within a few hours of onset, a single dose of tr. gelsemium; 15 to 20 minims in a little water on going to bed at night will usually prove all that is needed. This for an adult, children in proportion; if syrup of sarsaparilla comp. or of orange be added for the children, it makes a pleasant dose to which no objection is made. If the cold be of longer standing, I

repeat the above each night and give also one to three minims of the tincture hourly or less often during the day. While I do not claim this to be an absolute specific I have failed thus far to find a case where decided relief has not been quickly obtained and cure soon accomplished.

Should it fail I would be inclined to question the activity of the tincture used, in which case the alkaloid gelseminine would probably meet the condition.

LOCKBURN B. SCOTT.

Waskada, Man.

[Why not use the alkaloid from the start? That seems to us more rational, positively assuring the activity of the remedy. Dr. Scott's contribution on this twin subject comes a little late but is highly appreciated just the same.—ED.]

MASSAGE

Contraindications.—I have frequently reduced inflammation, relieved the nausea of pregnancy, etc., by massage, without the slightest ill effects. The only absolute contraindications I recognize, in any part of the body, are those of Brandt, pus and cancer, including, under the latter term, all malignant neoplasms.

Direction.—The direction in which massage is given is of the first importance. A mistake in direction is enough to change a beneficial proceeding into an injurious one. I have produced a cramp in a susceptible subject by percussion in the direction of the muscle-fibers, and then stopped it by percussion across the fibers. Effleurage should be given in the direction of the return circulation, venous and lymphatic. Deep petrissage of limb should always be given across the muscles. Any other direction interferes with the circulation, arterial or return. It is not so easy to give rules for massage of the viscera.

Prescribing.—Prescribing "massage," as is so often done, is as bad as prescribing "aconite." In one way it is even worse, for *every touch* of the masseur should have two objects, the *first diagnostic*, and the *second remedial*. Only so can it be properly adapted to the case, in kind, force, depth, duration, etc. Too much massage may be as bad as too much aconite. Needless to say, the only way to have satisfactory success with massage is for the doctor to give it himself. The practice will be a valuable education for him, too.

C. F. MORRISON.

Springdale, Wash.

STIMULANTS AND NARCOTICS

Ever since the earliest dawn of history there has been inherent in the human organism a longing or craving for something to blunt the keen edge of anguish and sorrow, as well as to curb the intellect and inhibit the will, thereby giving full reign to the sentiments and passions during times of conviviality and enjoyment.

Glancing down through the ages into the dim twilight of the past we behold the Chinese using wine made from grapes and beer from rice, somewhat like the present saki of Japan. Among the Hindus the common people drank sura made from rice, honey, barley and other ingredients, and the priesthood and rulers, soma made from the juice of certain plants, and which after fermentation was offered as a libation to their favorite gods, Indra, Vishnu and others. The ancient Persian writings, the Zend Avesta, dating back to the period of Zoroaster, possibly 4000 to 6000 years B. C., contain, like the Rig Veda, many references to a sacred drink, homa, and a popular drink, hura.

The Bible contains numerous references to the use of wine, while through the ages we find all peoples from the lowest savages to the most civilized men and women resorting to some form of intoxication.

Here on the one hand we behold the highly cultured lady imbibing her strong tea, the orator or statesman trying to conjure up the shade of Demosthenes or Cicero, or the poet to arouse his slumbering muse by liberal potations of brandy or whisky; while on the other hand we see the Guatemala Indians fuddling themselves with hemlock sap, the Peruvians with coca, the Tartars with fer-

mented mare's milk and the Algerians with hasheesh.

To the scientist and philosopher, whose function it is to study the phenomena of nature, search out their causes, trace their effects and coordinate all into a harmonious and symmetric whole, and especially to the physician, who should be a strong combination of both scientist and philosopher, this question appeals, or at least should appeal, with peculiar force. What subtle but resistless power has led races, nations and individuals to give themselves up to the indulgence of habits that have inevitably led to their degeneration, ruin or extinction.

If we as a nation and people desire to avert or prevent the evils and disasters that have overtaken the nations that have preceded us, we must avoid those things that led to their ruin. If we desire to preserve our physical, mental and moral powers and transmit them unimpaired to our children we must be guided by the facts of history and not allow our appetites and passions to cause our downfall and ruin.

As evils resulting from the use of stimulants and narcotics are much greater in the young than in the adult I desire to call particular attention to this part of the subject and the three headings of Tobacco, Alcoholic Liquors and Narcotic Poisons. In the next paper we shall take up the subject Tobacco.

E. STUVER.

Fort Collins, Colo.

A CASE OF ORCHITIS

Here is a case of orchitis treated successfully and cured quickly, which may be helpful to some one.

Mr. X., age 20. History of gonorrhea contracted four years before and not cured, leaving gleet. Jan. 1, 1909, he contracted the disease again or rather thought he did, was again badly treated, but on coming into my hands he had only the morning drop.

The day before he had been out all day in the wind and rain, lost his umbrella and ran a long distance after it. That night one testicle swelled to the size of an orange. He was in great agony all day and sent for me that night. By this time the other testicle was also swelled some.

The tongue was badly coated, breath foul. I hit that with compound cathartic and ordered him not to eat for twenty-four hours, giving gelsemin, atropine and echinacea to dilate the capillaries, quiet the nerves and get at the pus. I also ordered aconitine, 3 milligrams, arbutin, gr. 1-2, in six teaspoonfuls of water; one every thirty minutes till all were taken, to stop the fever and make the urine bland. Then I directed that libradol be applied all over the scrotum and gave hyoscine and morphine to ease the pain till the libradol got to work.

The next morning he was free from pain and in three days was "out of the woods."

F. G. DESTONE.

San Francisco, Calif.

THE COURSE IN ESPERANTO

I am very much pleased to see you take up Esperanto. It certainly is the most practical, easily learned and most "regular" language I have ever heard of. I cannot see how any one can doubt the necessity for an international language and when we have one so easy to learn, everyone should be only too glad to learn and use it. Scarcely a day goes by in which I use less than six or seven languages. How much easier it would be if enough persons, physicians especially, should take it up and use it.

I congratulate you on the enterprise you show in publishing lessons and I hope they will be followed by articles in Esperanto.

OMAR T. CRUIKSHANK.

Carnegie, Pa.

[If the Esperanto lessons continue to meet with favor, they will be followed with articles in this language, some, we hope, from foreign physicians.—ED.]

THE UNITY OF THERAPEUTICS

In your May issue (p. 580) Dr. Mays declines to accept my view that the difference between him and me is chiefly one of defini-

tions and prefers not to differentiate between the action of a drug and its *effects*. If Webster is right in saying that action is literally "a driving," and "effect that which is produced by an action or cause," Dr. Mays might as well decline to recognize any difference between *cause* and *effect*.

Of course Dr. Mays has too much intelligence to do this, but on the other hand, when I affirm that if any drug (strychnine, for instance) acts as a stimulant at any time it must always act as a stimulant, and that the paralysis which follows a poisonous dose is the effect of over-stimulation, Dr. Mays declares (CLINICAL MEDICINE, Dec. 19, '08, p. 1593) a depressant action causes the paralysis and the phrase "over-stimulation" is meaningless. If his definition of a stimulant and a depressant, given in the last sentence of his last letter are accepted he is right. They read: "A stimulant is that dose of an agent which, without affording nutriment to the body, has the power of enhancing or augmenting vital action without producing exhaustion or impairment at any time; while a depressant is that dose of an agent that lowers vital action and does nothing else."

If these definitions mean anything in this connection they mean that in a small dose strychnine will *act* as a stimulant, and ten minutes later in a large dose strychnine will have changed its *action* and become a depressant.

I submit there has been absolutely no change in the *action* of the strychnine, neither can there be, but the change of the dose has changed the *effect* produced.

I believe it is the lack of precision in the use of these four words (Action, Effect, Stimulant and Depressant) that has left the profession open to charges of inefficiency and inaccuracy, because, after a century of discussion it has not decided authoritatively such questions as whether alcohol is a stimulant or a depressant. Take an instance outside of therapeutics. A man under a bank of gravel is hit with a small stone detached from the bank by the *action* of gravity. The *effect* upon the man is a slight bruise. Ten minutes later tons of gravel fall upon him, set in motion by the *action* of gravity. The *effect* upon the man is paralysis due to the crushing process.

To be consistent Dr. Mays would claim in this case that the *action* of the force of gravitation had changed between the two occurrences.

I fancy most readers will agree with me that it is difficult to conceive of anything more absurd than such a claim.

In my original paper (The Unity of Therapeutics, CLINICAL MEDICINE, Nov., 1908, p. 1494), which has precipitated this discussion about the meanings of words, I freely admitted my disabilities as a pure clinician as compared with Dr. Mays' work in laboratories. Therefore, I think he should know that—aside from the devil himself—there is nothing more deceptive than deductions from imperfect experimentation, yet Dr. Mays declares his definitions of stimulant and depressant just quoted are deductions from experiments, which, as detailed by him, are markedly deficient (CLINICAL MEDICINE, May, 1909, p. 580). Beyond the fact that Dr. Mays' contentions, if accepted, would emasculate the conclusions reached in my first paper, this seemingly trivial dispute as to definitions has little interest.

As far as I am aware these conclusions, as a concrete statement, are original with me and have not been questioned during the five months since they were published except by this indirect attack of Dr. Mays.

These conclusions are: That the law, *similia similibus curantur*, is effective only when associated with the minute dose and when asthenic conditions are to be remedied; that both are laws of cure but neither of them is universal; that the former demands a stimulant and the latter a depressant, and that *no single drug can meet both indications*.

The importance of these conclusions can hardly be estimated if they are sound. Because their acceptance unites therapeutics for the acceptor—"Regulars and homeopaths, who adopt them will double their individual power to combat disease, while eclectics and alkaloidists doing so will be able to utilize both laws of cure (hitherto

regarded as diametrically opposed and irreconcilable) for the extension of the usefulness of their remedies and methods of administration."

Without any desire to prevent discussion or to strangle any arguments that may be brought against my views, I am quite content to rest my case leaving it with your readers—a jury of my peers. And if my appreciation of these conclusions as a long step forward in therapeutics has led me into using language too forcible to be courteous, I desire to express my regret and to withdraw anything offensive or unfair.

GEO. M. AYLESWORTH.

Collingwood, Can.

ERRATUM ERRATORUM!

In the June issue, page 722, in making a correction we succeeded in making several more errors. In pointing out and correcting a mistake in the *dosage of apomorphine* given in Shaller's "Guide," we quoted from Dr. Radue's work, but used the expression "24 tablespoonfuls" when we should have said "24 *tea*spoonfuls". Please take your pen and make the correction.

AMERICAN PARTY, INTERNATIONAL MEDICAL CONGRESS, AUGUST 29 TO SEPTEMBER 4

For the benefit of those who contemplate attending this Congress, we would state that ample arrangements have been made for hotel accommodations in Budapest, a large number of rooms having been engaged a year or more ago, in the Hotel Hungaria, for the members of the American party. Reservation should be made this month, to insure good rooms. Those who join this party will have no worry as to details, a competent guide being in constant attendance. The cost of the entire trip, including a week's board in Budapest, meals *en route*, railroad fare, tips, first-class steamship both ways, carriages for sight-seeing, visiting hospitals; forty-one days, $395.00. Sail from New York, August 12. Full information and itinerary may be obtained by addressing Dr. Chas. Wood Fassett, secretary Medical Society of the Missouri Valley, St. Joseph, Mo. (New York Headquarters, Grand Hotel, Broadway and 31st street; Atlantic City address, Grand Atlantic Hotel.)

Those who desire membership in the congress may send their application to Dr. J. H. Musser, chairman American Committee, Philadelphia, accompanied by a fee of $5.00, and professional card.

LOOK OUT FOR TETANUS!

Following the Fourth of July every year there is a terrific death rate from tetanus. Nearly every physician in active practice will be called upon the coming month to treat the wounds due to our annual celebration—and tetanus follows many of these wounds. In order that the number of deaths from lockjaw may be reduced to a minimum it would be an excellent thing if the following information, given in a late copy of *The Bulletin of the Department of Health of the City of Chicago*, could be placed in the hands of every layman as well as every physician. Certainly every physician ought to read carefully what follows:

Tetanus, or lockjaw, as it is commonly known, is caused by the lodgment of the tetanus germ in a wound, often a slight and quite unnoticed wound. This germ exists abundantly in street dirt and especially in and around stables.

The tetanus germ remains inactive as long as exposed to the air, but when carried beneath the skin and buried in the flesh, as in wounds from blank cartridges, percussion caps, rusty nails, etc., and the air thus excluded, it is aroused to activity and produces a poison the virulence of which is deadly in the extreme.

Fourth-of-July wounds, no matter how insignificant they may appear, should be attended to by physicians, who know best how to thoroughly cleanse them and apply the treatment necessary to prevent the growth and activity of the germ that causes lockjaw. All such wounds should be kept open to the air until dressed by the physician. Never seal a wound with court-plaster, collodion or similar dressings. As a preliminary precaution, pending the attention of the physician, the wound may be washed with peroxide of hydrogen.

That any doubt as to the necessity of having a physician attend to Fourth-of-July wounds may be removed we cite the following as the necessary treatment, even in cases of slight wounds:

1. Freely incise every wound.
2. Carefully and thoroughly remove from the wound every particle of foreign matter.

3. Cauterize the wound thoroughly with 25-per-cent carbolic acid.
4. Apply loosely a wet-pack of boric acid.
5. Give a full dose of antitetanic serum.

In no case should the wound be closed—it should be allowed to heal by granulation. The dressing and packing should be removed every day.

The administration of tetanus antitoxin is the most important part of the whole treatment. It affords perfect protection from tetanus, if administered soon after the infliction of an injury. Research has shown that the poison becomes deadly active before there are any outward manifestations of the infection and that by the time symptoms do appear it is in the great majority of cases too late for successful treatment.

Immediately after the wound has been dressed at least 1,500 units of the antitetanic serum should be given subcutaneously.

A SIMPLE TREATMENT FOR HYDROCELE

Dr. W. L. Kreider, Prairie City, Ill., in a recent letter to THE AMERICAN JOURNAL OF CLINICAL MEDICINE states that he has for many years been treating and curing hydrocele by the daily exhibition of 1-2 grain of the green iodide of mercury. He gives two and one-fourth-grain tablets after the morning meal and continues its exhibition for from four to five weeks. Absorption follows in every instance. The doctor owns frankly that this seems a very simple treatment but positively asserts its efficacy. We would ask our readers to try the method and report the results obtained. If hydrocele can be cured by the use of such small quantities of protoiodide of mercury and without the use of the trochar or knife the general practician wants to know it, for as a rule hydrocele cases are far from satisfactory ones.

THE PROPER TREATMENT OF TETANUS

An article entitled "The Surgical Treatment of Tetanus," published in the April issue of THE AMERICAN JOURNAL OF CLINICAL MEDICINE, has excited much comment and elicited a request for a similar article for publication in the same journal. In compliance with this request the writer purposes to go further into the minute technic of this treatment, as well as the history of its discovery and its first-known application, as advocated in the article mentioned, while the reader is requested to procure this former article for pathology and pathogenesis, reference, etc., for the study of this special treatment of this deadly malady.

Like the x-ray and a great many other *good* things in medicine and surgery, the discovery of this treatment for tetanus was purely accidental and altogether unexpected —a complete surprise.

Among the pioneers of southern Ohio during the early part of the eighteenth century was a man named William Miller who ran a produce-boat on the Ohio and Mississippi rivers from Cincinnati to New Orleans. Mr. Miller catered to the demands of the people on both sides of the two rivers, acting as a medium of exchange from the North to the South and *vice versa*.

This progressive, staunch pioneer was not long in discovering that horses were one of his best exchanges on the markets at New Orleans. It had at that time always been the custom that when a horse had lockjaw simply to knock him in the head and drag him out to the bone-yard. So it was that when one time a horse was attacked with lockjaw on his boat, just above the present city of Owensboro (Ky.), it was knocked in the head and thrown into the Ohio. When the animal's skull was fractured there was a loud hiss of escaping gas from the wound, and when the horse was thrown into the water it boldly swam to the Kentucky shore and to the surprise and consternation of all on board serenely began to graze, as though nothing had ever happened to it. When the boat stopped at Owensboro, Mr. Miller told some men at the wharf to go and get the horse, and if it recovered they were welcome to it. Inquiry on his return trip elicited the report that the horse was well and had been so from the moment he was found browsing on the banks of the river.

Vividly remembering the hiss of the escaping gas, Mr. Miller decided to experiment with the first horse discovered to be affected with this deadly disease. The result was that he lost no more horses from tetanus. In later years his son-in-law helped him with the work and is using this method

today whenever the disease and the opportunity presents itself, and always with more satisfactory results than any or all other forms of treatment combined.

With all to gain and with nothing to lose; with almost universal recovery when taken in time and early; with suffering to relieve and life (even of animals) to save; even viewing it from a cold-blooded financial standpoint, why then should the veterinary surgeon hesitate when the means are so simple and always at his command without cost?

Cleanse and bore into the "curl" in the horse's forehead through the dura mater, remove the gimlet, and if gas does not then escape, insert again and bore deeper, even perhaps to the third ventricle. Bore *early* and for *gas*, nor stop until you get it, and curative results will surely follow. All you need is an ordinary gimlet and the nerve to use it, as stated in my former article. The results will sustain this radical heroic surgical treatment over and above all other treatments, either singly or combined.

WILBUR FISKE STERMAN.

Winterset, Ia.

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[Dr. Sterman's article on Tetanus has excited much interest among our veterinary brethren and has been reprinted in *The Missouri Valley Veterinary Bulletin*. Already, we are informed, a number of remarkable cures in tetanus occurring in horses, when treated as he suggests, have been reported. We shall watch for further reports with great interest.—ED.]

ACUTE DIARRHEA AND HOW TO TREAT IT

Until within recent years, it has not been the custom of the practician to take into consideration the etiology of acute diarrhea when called upon to treat this condition. Given a case of this sort twenty years ago the physician, instead of endeavoring to rid the bowel of the causative pathogenic organism and the resultant putrefactive mass, did quite the reverse, administering opiates and spices which had a constipating action, thereby locking up the bowels and retaining whatever might have been in them. This line of treatment relieved the acute condition for the time being, but when the effects of the medication were past, there was a repetition of the diarrhea in a more virulent form, and if this treatment was persisted in, the condition passed from the acute into the subacute or chronic form.

With the recognition of the fact that acute diarrheas were caused by microorganisms a new line of treatment was inaugurated and diarrhea ceased to be treated empirically. It became apparent that the diarrheal discharge was not a disease primarily but an effort on the part of nature to rid the bowel of an irritant. Taking this into consideration the physician of today, instead of administering drugs which lock up the bowels and retain the irritant, does quite the reverse, exhibiting remedies which will assist nature in ridding the bowels of the cause, and following such assistance with agents which will render the bowel as aseptic as possible. Given a case of acute diarrhea, the progressive practician exhibits calomel and podophyllin to effect and follows this with a saline laxative, also to effect.

The first-mentioned agents, acting upon the liver, increase the flow of bile, nature's intestinal antiseptic, and by so doing bathe the entire intestinal mucous membrane with a fluid inimical to the life of the pathogenic bacteria.

The saline, by causing an exosmosis of fluids from the bowel walls and by its mechanical action, flushes the intestine thoroughly, removing its entire contents. Having cleaned out the intestinal tract the modern practician goes a step further and keeps the bowel clean by administering some sort of an intestinal antiseptic. The antiseptics mentioned for this purpose within the past few years have been legion and the fact that many have been found to be either inert or dangerous of administration caused many practicians to ridicule the idea of such a course of treatment. Within recent years a product, the sulphocarbolate in its pure form, has been found to give the results looked for in such cases. The sulphocarbo-

late salts most used are those of sodium, calcium and zinc. The two former act simply as antiseptics while the latter has the added astringent action. These are given either alone or in combination, this being indicated by the existing conditions. If there should be sufficient pain accompanying the diarrhea to call for the use of an opiate, codeine or one of the alkaloids of henbane may be administered with the sulphocarbolates. Acute diarrheas treated in this manner yield promptly, and by adopting the "clean-out, clean-up and keep-clean method" there is seldom any tendency to an immediate repetition of the condition.

GEORGE L. SERVOSS.

Fairview, Nev.

[Next month we want to print a large amount of matter on "Summer Diseases." Everyone is invited to contribute. Say your say briefly—in twenty lines if you can; stick to one thing and discuss it therapeutically; cut away from the "guess so's" and "probably's"; never mind the theories. *Your own experience is wanted!*

Let's make that number a hum-dinger! What say?—ED.]

ESPERANTO FOR PHYSICIANS

REVIEW

In Esperanto, how would you distinguish a noun? An adjective? An adverb? The singular from the plural?

How would you tell which of two nouns is the subject, and which the object of the verb?

How do you distinguish between the present, past and future tenses in the following sentences? Translate the sentences:

La koro estas en la korpo. La infano ploris. La frato suferos.

How is the female (girl) formed from *knabo* (boy)? A "fluid thing" from *fluid-a* (fluid)? A drunkard, from *drink-i* (to drink)? A saloon, or drinking place, from the same? What difference is there between *drink-o* and *drink-aĵ-o?* What is the significance of *drink-em-a*, as applied to a person?

Ferm-i is to close; what is *mal-fermi? Supre* is above; what is *mal-supre? Sinjoro* is gentleman; what is *Ge-sinjoroj?* Translate *ge-knaboj, bo-filo, ne-granda, mal-granda, sen-braka, libr-ar-o, dolor-eg-a, libr-ej-o, litet-o, lud-il-o* (from *lud-i*, to play), *fajr-uj-o* (from *fajr-o*, fire), *ŝanĝ-em-a* (from *ŝanĝ-i*, to change), *urban-o, urb-an-in-o* (from *urb-o*, a city), *okul-ist-o, ĉambr-ar-o* (from *ĉambr-o*, a room), *leter-uj-o* (from *leter-o*, a letter), *sen-ord-a* (from *ord-o*, order), *estim-ind-a* (from *estim-i*, to esteem).

Solv-i is to dissolve; what is the difference between *solv-o* and *solv-aĵ-o?* Translate, *La solvo de salo* (a salt) *per* (through, by means of) *akvo* (water) *faras solvaĵon.*

By means of the proper suffix, form nouns, from *efik-i*, to effect, signifying respectively (1) the act of effecting, (2) an effect, result, or thing effected, (3) efficacy, capability of effecting (abstract quality); from *dorm-i*, to sleep, signifying respectively, (1) sleeping-place, (2) sleepiness, (3) a sleepy person, (4) somnolent; from *kat-o*, a cat, signifying a kitten; from *drog-o*, a drug, signifying (1) a stock of drugs, (2) a druggist, (3) a place where drugs are kept; from *kovr-i*, to cover, signifying (1) the act of covering, (2) a cover (thing to cover with), (3) a coverlet (little cover); from *cigar-o*, a cigar, signifying (1) a cigar-box, or container, (2) a cigar-holder; from *juĝ-i*, to judge, signifying (1) a judge (by profession), (2) a judgment, (3) a court-house, place of judgment.

EXERCISE III

pren-i, to take.	*mi*, I.
kiu, who, which.	*li*, he; *ŝi*, she.
bezon-i, to need, want.	*vi*, you.
fort-a, strong.	*ni*, we.
dent-o, tooth.	*rigard-i*, to look.
akr-a, sharp.	*dir-i*, to say, tell.
vid-i, to see.	*ke*, that (conjunction).
don-i, to give.	*tio*, that (thing).
drog-o, drug.	*parol-i*, to speak.
ĉu, whether.	*pri*, about, concerning.
kurac-i, to treat (in sickness).	

Jen estas la prenilo (1) *kiun* (2) *vi bezonas. —La prenilo estas forta.—La dentoj de homoj* (3) *ne estas* (4) *akraj.—Al sana homo ne donu* (5) *drogojn* (2).—*Ni vidas vin* (2); *ĉu*

(6) *vividas nin?* (2) *—Rigardu!* (5)*—Mi diros al ŝi, ke ŝi faru* (7)*—tion* (8)*—Mi parolis pri* (9) *la drogisto.—Diru* (5) *al la kuracisto* (1), *ke li kuracu* (7) *la malsanulon* (1).

NOTES

1. *Pren-il-o.* The first instance of word-building. *Pren-i*, to take, to take hold of. Substitute *il-*, the instrumental suffix, for the infinitive terminal, *i*, and we get *pren-il-*. Add *o*, the sign of a noun, and we get *pren-il-o*, an instrument for taking hold, a forceps. [Forceps is properly a singular noun, not plural, as is often supposed, so that *pren-il-o* is correct. Some, however, write *preniloj* (plural), as some in English say "the forceps *are*."] The foregoing example will serve for all compound words, which, in future, will be merely dissected by hyphens in the notes into their component parts, thus: *kurac-ist-o*, *mal-san-ul-o*.

2. *Kiu-n.* Note the accusative, the direct object of the verb.

3. *Hom-oj*, "man," i. e., all human beings.

4. *Ne estas.* In Esperanto the negative precedes the verb, instead of following it, as in English.

5. Imperative.

6. Ĉu. In English, and many other languages, questions are asked by reversing the position of the verb and its subject, thus introducing a complication into the sentence, e. g., "He will give me a pill;" but, "Will he give me a pill?" In Esperanto this is simplified by prefixing *ĉu*—i. e., "whether?"—to the direct statement: *Li donos al mi pilol-on;* but *ĉu li donos al mi pilolon?* (Whether he will give me a pill?)

7. *Far-u.* An instance of the dependent use of the imperative (or subjunctive) in indirect sentence, introduced by "that". "I will say to him that he (must) do that." We may also say, as in English, *Mi diros al li far-i tion*, I will tell him to do that.

The imperative is used after *ke* only when a command, request, purpose, obligation, etc., is intended. When *ke* occurs in a direct statement, the appropriate tense is used in the dependent verb. *Mi diras, ke li estas tie*, I say that he is there; *mi scias ke li estis tie*, I know that he was there; *mi estas certa, ke li estos tie*, I am certain that he will be there.

8. *Ti-o*, that (demonstrative), is used when no noun with which it could agree is expressed. It is, itself, as the terminal *o* shows, an indefinite noun. The corresponding demonstrative qualifying a noun is *tiu*, e. g., *mi diros al li, ke li faru tiun aferon*, I will tell him to do (that he must do or attend to) that matter.

9. *Pri.* Attention is here called to the fact that in Esperanto *prepositions always govern the nominative.* The seeming exception—that the accusative is used after prepositions when movement (physical or figurative) towards the object is implied—is not really an exception: for the accusative then is that of motion towards, and has nothing to do with the preposition. This is proved by the fact that when the preposition of itself implies movement (as is the case with *al*, to, towards; *ĝis*, up to, until; *tra*, through, the noun following remains in the nominative; *Mi estas en la domo*, I am (already) in the house, *sed mi iros en la ĝardenon*, but I will go into the garden (movement towards it); *poste, mi re-iros al la domo*, afterwards I will go back to the house. No accusative in the last phrase, because *al* of itself implies motion towards. The difference is well shown in the sentence, *Birdo flugis en la ĉambron kaj nun flugas en ĝi* (not *en ĝin*), a bird flew *into* the room, and now flies (about) *in* it.

EXERCISE IV

tuberkuloz-o, tuberculosis.
dum, during, in the course of, while.
kapabl-a, capable.
tuberkulin-o, tuberculin.
ĉirkaŭ, about, around.
kelk-a, some.
instru-i, to instruct.
opini-i, to think, opine.
sun-o, sun.
radi-o, ray.
perd-i, to lose.
morbil-o, measles.
ag-i, to act.
por, for.
semajn-o, week.
lern-i, to learn.
komenc-i, to begin.
mov-i, to move.
mult-a, much; *mult-aj*, many: *mult-e da*, much, or many of.

cekum-o, cecum.
kaz-o, case.
nom-i, to name, call.
apendicit-o, appendicitis.
kaŭz-i, to cause.
punkt-o, point.
util-a, useful.
aŭtor-o, author.
literatur-o, literature.
dek, ten.
primari-a, primary.
grand-a, great, large.
mort-i, to die.
tiel, thus, so.
ĥronik-a, chronic.
ver-a, true.
region-o, region.
skrib-i, to write.
efik-i, to effect.
trov-i, to find.
nur, only.
kred-i, to believe.
sarkom-o, sarcoma.
oment-o, omentum.
skarlatin-o, scarlatina.
antaŭ, before.

The following sentences are taken from the *Voĉo de Kuracistoj:*

Pirket (1) *diras, ke tuberkulozaj infanoj perdas dum morbilo la kapablecon* (2) *reagi* (2) *je* (3) *tuberkulino por ĉirkaŭ unu semajno.—En kelkaj lernejoj* (2) *la instruistoj* (2) *komencas instrui la geknabojn* (2) *pri tuberkulozo.—Wilms* (1) *opinias, ke longa, movema* (2) *cekumo estas, en multaj kazoj de la tiel nomata* (4) *ĥronika apendicito, la vera kaŭzo de doloremeco* (5) *en regiono de la McBurneja* (6) *punkto.—Corbusier* (1) *priskribas* (2) *malutilajn* (2) *efikojn de sunradioj* (7) *kaj de varmegeco* (5).—*La aŭtoro trovis en literaturo nur dek kazojn de kredinda* (2) *primaria sarkomo de la granda omento.—Gouget* (1) *kaj Dechaux* (1) *priskribas neantaŭviditan* (8) *morton dum skarlatino.*

NOTES

1. Proper names of authors abstracted in the *Voĉo de Kuracistoj.*

2. *Kapabl-ec-o-n; re-agi; lern-ej-oj; instruist-oj; ge-knab-oj-n; mov-em-a; pri-skrib-i* (not to prescribe, but to write about. The word used for "prescribe" is *por-skribi*, to write for; or from the French, *ordonner ordinaci-i;*) *mal-util-aj-n; kred-ind-a.*

3. *Je.* An indefinite preposition, used in Esperanto in cases in which no particular preposition exactly fits the case alike in all languages, but different prepositions are likely to be used by different nations. It has a general significance of "in relation to," and may stand for English at, to, over, of, by, in. Different tongues, even different speakers using the same tongue, may use different prepositions in the same phrases, e. g., "in the circumstances," or "under the circumstances;" "done under my hand and seal," or "he wrote over his signature," etc. In all such cases, or wherever the proper Esperanto preposition for the meaning is not definitely clear, *je* is used in Esperanto.

4. *Tiel nomata*, thus, or so-called; present participle passive.

5. *Dolor-em-ec-o* and *varm-eg-ec-o.* Note that in word-building more than one suffix can be used when necessary: *dolor-em-a* means having a propensity to pain; *dolor-em-ec-o*, then, will be the abstract quality of a propensity to pain—tenderness, painfulness. *Varm-eg-a* is exceedingly warm, i. e., hot; *varm-eg-ec-o*, the quality of hotness, heat. Avoid more than one suffix.

6. *McBurneja.* Note the proper name used in adjective form, in place of the possessive case, for *la punkto de McBurney.* So we can say in Esperanto, *la kapitana ĉevalo*, for *la ĉevalo de la kapitano*, the captain's horse; *la flora odoro*, for *la odoro de la floro*, the odor of the flower. We say in English, indifferently, "the Sims speculum," or "Sims' speculum," "Kraske's operation," or "the Kraske operation." In Esperanto this principle is carried to its logical extremity, and any noun that can be used in the possessive case may be converted also into an adjective and so used in place of it, by adding the adjective terminal.

7. *Sun-radi-oj.* Sun-rays. A case of compound-word formation, like sunstroke, etc.

8. *Ne-antaŭ-vid-it-a-n*, not-before-been seen.

VERBAL PREFIXES AND SUFFIXES

The following prefixes and suffixes are used to modify the meaning of verbs (and consequently of the nouns and adjectives derived from them):

PREFIXES

DE—indicates from, down from: *de-ven-i*, to descend, come down; *de-met-i*, to depose, remove; *de-pend-i*, to hang from, depend.

DIS—separation, scattering (never mere negation, as sometimes in English): *dis-ŝir-i*, to tear apart; *dis-sem-i*, to sow broadcast, to scatter.

EK—commencing, sudden, or momentary action: *bril-i*, to shine, *ek-brili*, to shine forth (as when the sun bursts through a cloud or the stars begin to appear.) *Rid-i*, to laugh, *li ek-ridis*, he burst out laughing. *Kresk-i*, to grow, *ek-kreski*, to bud.

EL—as a prefix, implies thoroughness: *lern-i*, to learn, *el-lerni*, to learn by heart. As a preposition, *el* of course has its usual signification in composition: *ir-i*, to go, *el-iri*, to go out.

MAL—the direct opposite: *permes-i*, to permit; *mal-permesi*, to forbid.

RE—repetition, back again: *send-i*, to send; *re-sendi*, to send back. *Dir-i*, to say; *re-diri*, to repeat.

SUFFIXES

AD—indicates continued action: *parol-i*, to speak; *parol-ad-i*, to make a speech. *Uz-i, to* use, *uz-ad-i*, to make use of, to employ. This sense is carried over to derived nouns. Thus, *parol-o* is a word, but *parol-ad-o* is a speech; *uz-o* is use, but *uz-ad-o* is continued use employemnt.

EG—intensive: *pluv-i*, to rain; *pluv-eg-i* to pour.

ET—diminutive: *rid-i*, to laugh; *rid-et-i*, to smile. *Am-i*, to love, *am-et-i*, to like.

IG—To cause to be or do that implied in the root: *sci-i*, to know, *sci-ig-i*, to cause to know, to inform. *Mal-san-ig-i*, to make ill.

IĜ—To cause oneself to be or do, to become: *sci-iĝ-i*, to cause oneself to know, to learn. *Mal-san-iĝ-i*, to become ill.

[Note: By the use of the last two terminations, many most convenient expressions can be extemporized at will. An intransitive verb can be made transitive by the addition of *igi:* thus, *pend-i*, to hang, gives *pend-ig-i*, to hang, in the sense of cause to hang. On the other hand, a transitive verb may be made intransitive or reflexive in significance by the addition of *iĝ-i:* thus, *romp-i*, is to break, in the active sense: *vi rompos la bastonon*, you will break the stick; but *la bastono romp-iĝ-os*, the stick will break, i. e., become broken.

Adjectives can be made into either transitive or intransitive verbs by this means: thus, *grand-a*, large, gives *grand-ig-i*, to make larger, enlarge; *grand-iĝ-i*, to become larger, to increase. *San-a*, well, healthy, gives *san-ig-i*, to make well, to cure; *san-iĝ-i*, to become well, to "get well."

Many nouns, also, can be made into verbs by these suffixes. Thus, *fianĉ-o*, a fiancé, gives *fianĉ-ig-i*, to betroth, to affiance; *fianĉ-iĝ-i*, to betroth oneself, to become engaged. (For a woman, of course, the words are *fianĉ-in-o, fianĉ-in-iĝ-i, fianĉ-in-iĝ-i.*)

Igi and *iĝi* can form verbs also with numerals, prepositions, prefixes and suffixes:

Unu, one: *unu-ig-i*, to make one, to (cause to) unite; *unu-iĝ-i*, to become one, to unite, combine.

Al, to: *al-ig-i al*, to make, purpose, or intend for, attribute to; *al-iĝ-i*, to make (join) oneself to, become an adherent of.

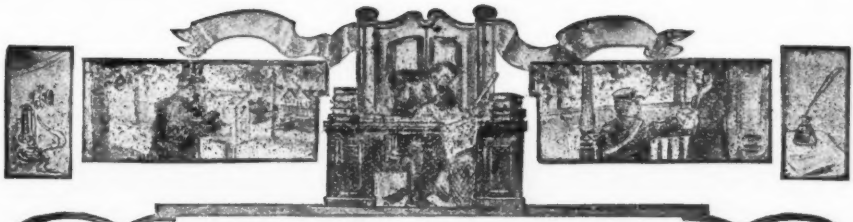
Dis-, apart; *dis-ig-i*, to cause to separate, to sunder; *dis-iĝ-i*, to come apart.

An-, a member: *an-ig-i*, to make a member of; *an-iĝ-i*, to join.

Ig-i alone means to make or cause—*igu veni la kuraciston*, make the physician come, "fetch the doctor;" *iĝi*, to become, "to get," *vi iĝos sana baldaŭ*, you will soon get (become) well.

Great explicitness is thus gained for Esperanto, as it has no verbs that are both transitive and intransitive, such as the English cease, continue, pass, leave, finish, begin, etc., which are represented in Esperanto by *ĉesi* and *ĉesigi; daŭri* and *daŭrigi; pasi* and *pasigi; lasi and lasigi; fini* and *finiĝi; komenci* and *komenciĝi; igi* or *iĝi* being used, according as the primary verb is intransitive or transitive.

Finally, the reflexive use of verbs in the impersonal sense so common in French and other languages, is found among non-English speaking writers: To "find oneself," instead of "to be;" to "call oneself" instead of "to be called," are examples. "There is a tree there," may be rendered, as in English, *estas tie arbo*, or as (occasionally) in French (*il se trouve la un arbre*) *trovas sin tie arbo* (a tree finds itself there). *Troviĝas* may here replace *trovas sin*. This mode of speech need not be used by English speakers, but it will be met with in foreign Esperanto writers and should be understood.]



CLINICAL · MEDICINE
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PART II.—LESSON SEVEN

RESTORATIVES AND ALTERATIVES

We have two more important classes of remedies to discuss, under the great division of disease-medicine. I will call them restoratives and alteratives.

It is well to bear in mind that there are two great classes of remedial agents:

First those used in cases which cannot be relieved by a single dose of any remedy, but require repeated and prolonged administration. Our restoratives and alteratives come under this class.

The second class are those employed in cases which are susceptible of immediate relief by the administration of a single dose. These may properly be termed symptom-medicines, such as hypnotics, cathartics, emetics, etc., and they have already been discussed.

Symptom Medicines.—Upon reflection it will be seen that remedial agents in this class, symptom-medicines, are by the nature of the case designed for the relief of some manifestation or change in the system or in its function, indicating the character, locality, severity, etc., of a morbid process; in other words, the symptom of disease. That is the reason we have termed these remedies symptom-medicines, partly because of their specific virtue in relieving symptoms, and partly from the fact that they produce certain manifestations characteristic of themselves.

Restoratives.—It is obvious to every reflecting physician that there is a class of remedies which act by supplying some insufficiency in the animal organism, the agent in such cases being either itself the substance lacking or its analog, or one that by its presence brings about the restoration of the deficient element or secretion. Iron or fat for instance act in certain forms of anemia in which these ingredients are wanting in the red corpuscles; fats or the earthy salts behave similarly in conditions where the tissues are deficient in these necessary constituents. On the other hand, the vegetable bitters, though not natural ingredients of the system, act upon the gastrointestinal mucous membrane, stimulating the glands to secrete a larger quantity of normal digestive fluids.

In view of the physiologic action of the remedies pertaining to this division the "restoratives" is a word so aptly expressing their general character that we should adopt this name to describe them.

Hematics.—Of the restoratives we will first discuss the hematics. This is a very important group of agents, as they furnish to the blood matters which are defective in our dietary. They are perhaps nearer to

food than medicine, though a hematic may be used in what is truly a medicinal dose. Hematics go to build up the blood, to increase blood formation, and with it the growth of every part which is fed by the blood, and that is in fact the whole system.

Iron.—Of all hematics iron probably comes first. It is a food rather than a medicine. Iron is a constant and necessary constituent of the body and so must be regarded as an important food. It is an essential element of the blood, there being normally about one part of iron to two hundred and thirty parts of red globules. It has also been found in the gastric juice, bile lymph, chyle, milk, urine, pigment of the eye, etc. This omnipresence of iron in the organism is readily accounted for when it is remembered that all food of man contains this element in greater or less proportion. Iron may be called a respiratory nutriment because of its property of increasing the oxygen-carrying power of the red corpuscles, muscular force and functional activity generally being dependent upon the supply of oxygen or proper respiration as the motive power.

When the system is in a normal, healthy condition sufficient iron is furnished by the mixed diet to answer all physiologic requirements. In many diseased conditions, however, there is a deficiency of iron, and it is necessary to restore this element in one way or another.

The Chief Actions of Iron Are.—First, to increase the oxygen-carrying powers of the blood. Second, to convert the oxygen present in the tissues into ozone. Third, to serve both as a local and general astringent.

By the use of iron we can increase the amount of hemoglobin upon which the chemical interchanges conducted by the red corpuscles depend. Under its use in anemia the cheeks grow rosy, the lips recover their usual color, the eyes brighten, the tongue becomes less flabby. There is a general increase in body-weight, a development of muscles, and a heightened condition of nerve action. Tone is given to every part of the system. Iron salts in anemia exert important properties other than an influence over the growth of the corpuscles. They act on the relaxed mucous membrane of the digestive canal and probably in this way tend to restore its function. Moreover, it is probable that after its entrance into the blood the iron exerts an influence beyond that of merely increasing the quantity of red corpuscles.

Iron preparations are not only useful simply as a nutritive in promoting the formation of the blood but because of their beneficial influence on the tissues of the body, and becoming important curative agents. Large quantities of the soluble astringent preparations should be administered when we desire to benefit tonically the mucous membrane of the digestive canal and the tissues.

Iron may be given as an hematic and it may be usefully given in larger quantities than can be utilized in the blood, the excess acting as a tonic when given to healthy persons for a long period. Iron produces plethora or an excess of red corpuscles. When given to anemic persons it raises the condition of the blood to that of health.

After a time the blood appears, as it were, to become saturated with the iron and ceases to assimilate it. In certain chronic conditions it is difficult to see any point of saturation, and iron may in many cases be usefully continued for years. The addition of iron to the food often produces effects that are little less than marvelous. Fothergill says that it not only gives tone to the whole system, but nutrition is markedly advanced by its presence in the fluids of the body. This is often well shown in the improvement of a feeble heart under a course of iron.

Digestion becomes more perfect under the use of iron. Digestion cannot be normal when the blood has ceased to be so. Every part seems to perform its function more efficiently under the stimulus of iron, the blood once more becoming rich in one of its most important constituents.

Contraindications for Iron.—The conditions which call for the administration of iron are particularly those where debility is combined with anemia. In these conditions iron acts as a tonic, as well as causing an

increase in the number of red corpuscles, but there are certain circumstances which contraindicate the use of iron and these are deserving of note and remembrance. It is not enough to say that in conditions of plethora and vascular fulness iron should not be given. There are conditions in which it is well to resort to other tonics and even to other remedial agents altogether.

Vascular Activity and Congestive States Contraindications.—Pereira says "that contraindications are great strength and activity of organs, excessive tonicity, characterized by a firm condition of the pulse, in general plethora, in fever, and in acute inflammation. To these may be added congestion or a tendency thereto of important organs, especially of the brain, and intestinal irritation." Again he says: "Administered in large quantities or when the alimentary canal is in an irritable condition all the compounds of iron are liable to excite heat, weight, and uneasiness at the precordia, nausea and even vomiting and sometimes purging."

From the well known action of iron in increasing the red corpuscles, no one would now think of giving iron in states of vascular fulness. It is unnecessary to say anything further on the subject.

Iron Contraindicated During Fever.—Conditions of vascular excitement are unsuited for exhibition of iron. As long as there is rapidity of pulse combined with rise of temperature, so long must iron be withheld in the treatment of acute disease. When the convalescence is well established, when the pulse may be fast and small but is without excitement, when the temperature is normal or below it, when the skin is cool, the face pale and the tongue clean, then, and not till then, should the administration of iron be commenced.

If it produces any gastric disturbance, or headache or fever, it should either be totally abandoned for a time or the dose much reduced. Vegetable tonics such as quinine or strychnine together with mineral acids, such as hydrochloric, phosphoric, or even hydrobromic acid in some cases, should be given instead, and then the iron administered in small doses, at first after meals. Thus used, iron can often be tolerated when it disagrees as given in the usual way. The same rule holds good of the resort to iron when the pyrexial stage of ordinary crisis has passed away.

The tonics should be given before food and the iron preparation after. As long as the tongue is thickly coated or red and irritable it is well to withhold iron altogether. This is especially true of tuberculosis. However much the general pallor, the lack of tone, the loss of power seems to call for iron, it is useless and sometimes worse than useless to give it unless the tongue is clean without irritability. If the tongue is red and irritable bitters are to be adhered to until all intestinal irritability has passed away, of which the condition of the tongue is the index. If the tongue is loaded with fur, bitters and acids are to be preferred, in association with a little saline laxative, usually preceded by a mercurial. The gastrointestinal canal must be gotten into a normal condition, neither too irritable nor sheeted with a layer of epithelium as indicated by the fur upon the tongue, before iron can be prescribed satisfactorily.

Conditions Indicating Iron.—In ordinary convalescence from acute conditions it is well to commence with the milder preparations. Nothing can surpass the arsenates of iron, quinine and strychnine with nuclein in conditions of convalescence. In atonic gout iron is commonly of no service and makes the patient uncomfortable. In the plethoric forms of gout iron is never indicated. But when there is evidence of chronic renal disease with anemia and even with albuminuria, then it seems desirable to administer iron in some form; very often, however, it distinctly disagrees. It is well to see that there is no acute action going on anywhere, and the joints are cool, even if still enlarged, before commencing with iron.

Potassium bicarbonate, or potassium and sodium tartrate (cream of tartar) with a little strychnine and arbutin, with plenty of water, are the medicinal agents to adhere to until all is perfectly quiet. Effervescent magnesium sulphate, with lithium carbonate and

colchicine, along with diuretics and general tonics like strychnine, are of great value.

When the tongue is clean, the skin cool, and there is no evidence of much acidity, then small doses of iron may be commenced. In all of these cases, it might be remarked the urine should be tested for the degree of acidity, and if it is high, alkalis should be given along with the saline.

When iron is begun it should be given along with the alkalis, as it will be found that if the alkalis are left off the iron disagrees. Especially is this the case with elderly people. It may be laid down as a rule that the toleration of iron diminishes as the age increases. With old persons iron comparatively rarely agrees, and then only in very small doses. Young children take iron well and it is often well borne by them in conditions which in the adult distinctly forbid its use. But as age advances the system seems to grow less tolerant of the drug in any form, and the dose must be much diminished. In advanced life, in convalescence after acute disease, or paroxysms of gout in any of its forms, chalybeates have often to be abandoned and alkalis with vegetable tonics or bitters substituted in its stead. It would seem that the power of the digestive organs to assimilate iron is strongest in children, except it be very young children and babies, and that it diminishes until in advanced life blood manufacture seems often to be interfered with rather than assisted by it. Consequently to old people it is often better to give tonics, alkalis and easily digestible foods than iron, when it becomes desirable to aid the nutritive processes.

Iron Not to Be Used in "Biliousness."—There is one condition in which iron is absolutely forbidden, and that is the condition known as biliousness.

So long as there is a foul tongue, a bad taste in the mouth and fulness of the liver, with disturbance of the alimentary canal, iron is to be prohibited; not only is it of no service, but it positively does harm. It aggravates all the symptoms and intensifies the conditions.

Iron undoubtedly increases the oxidizing power, but somehow or other in biliary disorders it does not suit. Destructive oxidation is at the root of these troubles and yet iron does not agree with such cases. As long as any of the symptoms remain and there is any fur whatever on the tongue, iron should not be given. The patient may be anemic and iron seems to be urgently needed, but it will do no good until the system is in the proper condition to receive it. The liver must be thoroughly unloaded by alkaline salines first, then a strychnine salt and nitrohydrochloric acid be taken. The salines should be taken the first thing in the morning, and when the liver is once more working sufficiently, iron may be prescribed. It seems that the oxidizing power of iron embarrasses rather than aids the liver when working inefficiently, and when iron is given the morning purgation of saline should still be maintained.

By attention to these suggestions much may be done for bilious cases, and so much discredit avoided. In many cases one will get better results from the administration of alkalis than from salines. A simple alkaline treatment often does the patient a great deal of good. I do not know whether it is by supplying alkalis to the blood or improving the digestion, but very good results are obtained by using them, not only in these bilious attacks but in anemia. Disturbances of the gastrointestinal canal, bilious or otherwise, are contraindications. In such conditions iron may cause discomfort, nausea and not uncommonly rise of temperature. The digestive organs must be got into good working order before iron is administered if it is to be properly assimilated.

When given in large doses iron always blackens the stools, but in moderate doses and properly assimilated, this blackening of the stools is not so marked. The color of the stools may be utilized as an indication as to how far chalybeates are assimilated and are likely to be useful.

Iron Contraindications in Women.—There are two conditions found in women in which iron is either totally contraindicated or to be given with great caution.

First is the condition of amenorrhea. In such cases, especially if the patient be of

tense fiber, depletive measures are to be resorted to.

The other is the opposite condition of menorrhagia. Of course no one would think of resorting to any form of iron, however astringent in those cases of menorrhagia which are due to a state of general congestion. But there are cases of menorrhagia associated with pallor and debility where the usual compound of iron and ergot is not so useful as a non-chalybeate. In these cases it is not an imperfection in the processes of blood manufacture which is to be remedied, for the blood is made rapidly only to be lost by these menstrual periods. An irregular process of rapid blood making with still more rapid blood loss is established, and this requires appropriate treatment. It is undersirable to stimulate blood formation by iron, for the greater the increase in the bulk of the blood the more excessive the blood loss, and to give iron is but to aggravate the condition. It is here desirable rather to limit the rapidity of the blood formation, so that when the general vascular fulness of the menstrual period comes, it will not find the blood-vessels too distended with blood. This will diminish the loss and so the blood waste will be economized.

In these cases it is the proper practice to lessen the loss rather than to stimulate blood formation. During the interval saline laxatives with dilute sulphuric acid with some vegetable bitter forms an appropriate medicinal remedy and should be given along with a restricted diet. At the periods the dose might be increased and the patient kept quiet, while all foods should be cold. By such a plan the irregular condition of rapid blood formation and blood loss would be converted into a steady state of slower blood formation with diminished loss. The same rule holds good for other periodical hemorrhages and especially in some forms of hemostasis.

Even in cases of menorrhagia where it is necessary to encourage blood formation during the interval it is often well to cut off the chalybeates a day or so before the menstrual appearance and substitute laxative salines and the bitters mentioned above. By such a plan the blood waste by the catamenia is reduced and the necessity for great blood formation minimized.

Finally, the consideration of iron is confined to its use as an hematic, its use in pyrexial affections, as erysipelas or scarlatina, not being included. When used as an hematic it is clear that certain points must be kept in view, first that the digestive organs be in fair working order, and second, that such precautions be taken as to its administration when it is necessary to resort to it. When iron is given as an hematic or tonic, it is well for it to be taken with food. This should be made a rule in practice. It is, however, convenient at times when iron is given along with alkalis or bitters to depart from this rule.

Iron in Chlorosis.—One remarkable thing about the action of iron is its effect upon the dyspnea of chlorotic girls and others. In these cases there is pallor amounting often to waxiness, diminution in red corpuscles and marked shortness of breath on exertion, from lack of these oxygen-carriers. There is general loss of body-temperature, from imperfect oxidation, while what ought to have been burned is stored up as fat. In fattening cattle, farmers often bleed an animal which is not fattening quickly in order to produce anemia artificially. Under conditions of anemia changes take place spontaneously (such as the farmers induces deliberately), especially in young and not fully grown persons, chiefly girls.

Iron soon induces a change and restores conditions to their normal conditions. It must, however, be borne in mind that when the blood is either broken down or its formation hindered by some blood-poison, iron will not cure the anemia unless combined with some remedy specific to the poison in each case. For instance in lead poisoning potassium iodide is absolutely requisite to good blood formation. In syphilis mercury, in gout colchicine and alkalis, in malaria quinine should be added to the iron. It is a matter for surprise how little this fact is recognized. Often indeed these specifics act as hematics by destroying the poison which is exerting so injurious an influence upon the blood.

Synergists to Iron.—It has been found that when nuclein solution is given at the same time with iron, the proportion of the latter that is held in the body is increased. In the long list of chalybeates there is room for endless variation as to combinations with other salts, according to the individual case, condition and idiosyncrasy. The best preparation is that which best agrees with the state of the patient and disorders his digestion least, and hence can be given in the largest doses.

All the tonics are synergistic to iron, as well as the whole tonic regimen of cold or salt-baths, high feeding, open air, mountain or sea-shore, exercise, etc. For the use to which iron is put as a reconstituent tonic, the arsenate is undoubtedly the best chalybeate. While iron is an antidote for arsenic, acting by rendering the latter insoluble, this insolubility is not absolute but relative, and prompt evacuation of the stomach must follow the use of the antidote.

For anemia with weak heart and adynamia Burggraeve associates iron arsenate, with digitalin to rapidly reestablish the normal respiratory and circulatory rhythm. He also employed this agent for the chloro-anemias due to delay in establishing menstruation in the scrofulous cachexia. Hare recommends iron arsenate in anemics with dry scaly skin disease and in the anemia of chronic diarrhea.

We shall have more to say on the treatment of chlorosis and other anemias when we take up the special therapeutics.

PHYSIOTHERAPY

PHOTOTHERAPY

The term "phototherapy" refers to the clinical uses of all forms of radiating energy that emanate from the solar spectrum or any part of it.

The Solar Spectrum is the spectrum of the sun or of any source of light resembling the sun in the spectral composition of its force-manifestation (light). Thus the electric arc-light—in the spectral sense—is equivalent to sunlight in kind, if not in degree. This is to say that the light of the sun and that of the electric arc are adapted to the same clinical uses because the spectral composition is the same. To obtain the "spectrum" of light, we allow the latter to fall through a prism, in this way breaking the light up into its component rays.

The Solar Light (or that of the electric arc) contains seven visible kinds of light, i. e., seven varieties of energy capable of affecting the retina of the human eye. These seven varieties are shown when sunlight is refracted by globules of moisture floating in the atmosphere, giving us the seven colors of the rainbow.

But there are other forms of energy in light that are not perceived by the human eye. These invisible rays are found on either side of the visible spectrum, and, to indicate their respective location with reference to the red and violet fields of the spectrum, are called *infra*-red and *ultra*-violet rays. The visible rays of the spectrum are *red*, orange, yellow, green, blue, indigo and *violet* rays.

The roentgen rays, or the energy of the radioactive substances, such as radium, do not belong under the head of *photo*-theraphy. They are not spectral rays, but form a chapter of their own, viz., *radio*-therapy.

The Spectral Rays (as produced by the sun or the electric arc-light) have three distinct functions, to-wit, *heat* production, *light* radiation, *chemical* action.

In keeping with this triple function we recognize heat-rays (*thermic* rays, *calorific* rays), *light*-rays (*luminous* rays), and *chemical* rays (*actinic* rays).

Heat is produced principally by the infra-red, red and orange rays. Light is generated mainly by the yellow and green rays, while the blue, indigo and violet, and especially the ultra-violet, rays are chemical (actinic) rays.

The Effects which the different forms of light-energy are capable of producing on the human organism may be summarized as follows:

The Heat-Rays stimulate gently, increase arterial pressure, promote oxidation, accelerate and intensify local metabolism, encourage absorption and granulation, relieve

pain, in short, do everything that dry, penetrating heat is capable of accomplishing. *Dry heat* of this kind is abundantly produced by the *incandescent* light. It becomes wonderfully sedative and analgesic if a blue globe is used and placed in a parabolic reflector. This is the idea with which the name of Minin of St. Petersburg is associated. Recently a multiple lamp of this kind has met with much favor (Russian lamp). The single white 500-c. p. incandescent lamp mounted in a hood has been advertised a greal deal under various names, although it is by no means equal to the multiple blue lamp of Minin.

The Light-Rays, pure and simple, are individually of but little clinical interest because they are always in combination with heat-rays or chemical rays. In a general way it may be said that they supplement the action of the chemical rays.

The Chemical Rays are of the greatest biologic and therapeutic interest and importance. They are the disinfectants in nature's vast domain (germicides) and influence the process of organic existence (life) in many essential details, especially by their affinity for oxygen. They affect the processes of respiration and hematopoiesis by influencing the consumption of oxygen, the manufacture of hemoglobin and the qualitative composition of the blood. They, therefore, represent a vital stimulant of supreme importance.

The name of *Finsen* will never be forgotten, because it was he who recognized the overtowering biologic importance of the chemical rays and defined the sphere within which they could be made clinically available. His method consists in concentrating the light of the sun or the electric arc and causing it to pass through a sheet of water, thus eliminating the heat-rays and obtaining a strong and *cold* concentration of the chemical rays. Their usefulness and efficacy have long been recognized in the treatment of all bacterial invasions of the skin and subcutaneous tissues and in the treatment of chronic skin diseases, indolent ulcers, etc. Many devices have been put on the market embodying the Finsen idea.

Sunlight.—From what I have stated it is plain that the sun, after all, is the perfect phototherapeutic apparatus. The sun-bath of the ancients, religiously practised by the common people as a part of their daily routine, and eulogized by Hippocrates, has risen to a high plane of therapeutic significance in these latter days. We have learned to appreciate the *helio*-therapy of antiquity, because we now know something of the tremendous biologic importance of sunlight.

The researches of Minin, Finsen, Bang, Kattenbracker and many others have revealed the well-nigh unlimited clinical possibilities of the different agencies contained in light (thermism, luminosity, chemism), individually and collectively. We have learned to appreciate the value of these agencies in the treatment of disease. We are prepared to appreciate the value of an effective sub stitute for sunlight when the latter can not be procured or when circumstances, e. g., the inclemency of the weather and the climate, make it difficult or even impossible to give our patients the benefits of applications of solar light.

Artificial Sunlight.—This much desired substitute for sunlight is now offered in the form of a cleverly constructed therapeutic lamp of beautiful design and finish, consisting of a powerful arc-light placed in front of a reflector and inside of a cylinder, one end of which is open and allows the passage of the tremendous volume of light generated by the arc. The lamp is mounted on a pedestal which contains a powerful and easily regulated current-controller. It seems to me that this lamp is destined to play a most important part in the practice of modern phototherapy. It represents the most successful attempt to construct an apparatus for the production of *artificial sunlight.* What can we do with the electric arc-light?

Uses of Arc-Light.—To begin with, its usefulness covers the whole territory of clinical indications which are met by application of *dry heat.* The penetrating character of the thermic rays radiated by an arc makes them available when other forms of dry heat, which explode on the skin or in the subcuatneous tissues, would inflict un-

bearable torture and eventually burn and detroy the tissues.

The heat-rays produced by this lamp carry the beneficent effects of dry heat into the deep tissues. The effects on the local circulatory, metabolic and absorptive activities, are most profound. In cases of deep *muscular rheumatism* (for instance, lumbago) this form of dry heat is, for the reasons given, one of the very best therapeutic agents. Local applications produce a marked anodyne effect and can be employed in all cases where the prime object is the *relief from pain*. The action on the skin and on the subcutaneous tissues is coincident with considerable metabolic stimulation. The use of this lamp, therefore, is indicated in all cases in which granulation or absorption is to be encouraged.

The arc-light produces an abundance of *chemical rays*. What is the effect of chemical light on the living tissues?

Effect on the Tissues.—If a beam of concentrated chemical light is allowed to fall upon healthy skin, the eventual result will be an erythema followed by much local irritation, dermatitis, molecular death and desquamation. The tanning of the skin in the summer is the result of the deposition of pigment in the skin. Pigment is nature's safeguard against the destructive action of the chemical rays, the latter being absorbed by it.

Chemical light seems to affect the procreative function of plants and animals so far as the sex-production is concerned. Chemical light favors the production of males. The germ-killing power of chemical light has been proven beyond a doubt. It has a strong affinity for oxygen. It produces a disintegrating effect upon living tissues. The greater the resisting power of the tissues, the less intense will be the action of the chemical rays. Since morbid tissues are less viable than the normal, the destructive effect of the chemical rays upon the cutaneous tissues wherein tubercle-bacilli or other germs have found lodgment, can be readily understood.

The treatment of lupus is the classical example of the physiological action of Finsen's rays. Their germ-killing power strikes at the very essence of the affliction. They stimulate healthy action by attracting oxygen to the part. The morbid tissues of the afflicted portion are disintegrated by the rays. In this way a healthy reaction is set up, which tends toward restoration of the normal condition. The consistent and persistent use of the Finsen lamp is indicated in all *parasitic skin diseases*. Lupus, sycosis, tinea, certain forms of chronic eczema, psoriasis, disease of the hair-follicles, furuncle, carbuncle, alopecia areata, etc., furnish a rich field for successful clinical work.

Light Therapy and Internal Disease.—What degree of clinical usefulness may be attributed to these rays in the treatment of internal diseases, we are not yet prepared to say. That the body is practically translucent, or can be made so, can not be questioned. It is needless to point out the enormous importance of this fact in connection with the possibilities which chemical light offers in the treatment of *tuberculosis* of internal parts, especially in cases of incipient tuberculosis of the apices of the lungs. Chemical light forces the absorption of oxygen over the area acted upon by the light and a corresponding increase in the output of carbon dioxide follows. This fact makes chemical light a local alterant of the greatest value.

A Few Precautions.—It is plain what an unlimited number of clinical indications may be met by the proper use of this new therapeutic lamp. The proper technic should not be neglected. The comfort and tolerance of the patient should be considered. The eyes of patient and attendant should be protected by means of blue glasses. Parts that are not to be exposed can be covered and in this way shielded. Seances last from fifteen minutes to an hour, depending on the tolerance of the patient, the character of the trouble and many circumstances which are suggested by the peculiarities of the individual case.

Chromotherapy.—The subject of chromotherapy or treatment by means of *different colors*, has recently attracted much attention. The therapeutic arc-light should

be equipped with colored glass-shields for the administration of chromotherapeutic agencies. Let me repeat some observations which I have on a previous occasion discussed in connection with this subject.

Blue Light possesses wonderful sedative power. The royal mausoleum at Charlottenburg in Germany has a reputation of being a veritable shrine where persons with shattered nerves can find peace and comfort. The story goes that the spirit of the sainted Queen Louise, the idol of the German people, hovers about this place and brings peace and happiness to those who seek refuge within the hallowed walls where the mortal frame of that angel of peace had found its last resting-place. Matter-of-fact physicians however—for science is brutally truthful—attribute the sedative effects observed to the mellow blue light with which the magnificent stained windows flood the interior of that historical place.

Finsen explains the quiet and peace of the evening hours by the influence of the deep-blue light emitted by the canopy of heaven. Many experimenters in hypnotism use blue light to enshroud the organisms of their subjects with the tranquility which facilitates concentration and suggestive control. I have demonstrated the *sedative effects of blue light* by placing a Minin reflector ten feet in front of a person who is comfortably seated and is told to rivet his eyes on the blue light in front of him. The average person falls asleep within five minutes.

Further, in the cutaneous tissues the sedative effect of blue light shows itself by a complete suspension of sensation. This fact makes *blue light a local anesthetic* with a great range of usefulness, especially in minor surgery and in dentistry. In emergency-surgery blue light not infrequently takes the place of the hypodermic syringe.

Whatever the physical characteristics of this force-modality may be, it is different from any energy which a white globe, however powerful, is capable of producing. The pain-relieving action of a strong incandescent white light is distinctly due to heat and resembles to all intents and purposes the anodyne effect which follows any other application of heat. In the blue light the color is of vital significance, as shown by the sedative, anodyne and even soporific action of the blue light at great distance from the patient when the effects of heat would be out of the question. That the effect of blue light is not suggestive but distinctly physical in character is shown in its action upon blind patients and also upon persons who are in total ignorance of the effect aimed at. I beg to remind again the reader of Finsen's statement attributing the physiological calm of the evening hours to the relative sparsity of the invisible chemical (ultraviolet) rays and the preponderance of the visible chemical (blue) rays which are radiated by a deep-blue sky.

There are a thousand different ways in which blue light can be made therapeutically available. In local troubles characterized by lowered vitality (e. g., passive hyperemia, catarrhal conditions, indolent ulcers, local evidences of autointoxication, etc., etc.,) the blue light is useful. It restores the physiological tone of the part by increasing local metabolism, relieving pressure and promoting absorption.

Red Light has a distinctly stimulating, exciting and irritating effect on the animal organism. The red light of the tenderloin districts of large cities, the red gowns, draperies and curtains of the temples of Venus Vulgivaga and of their inmates, the red rag waved in front of a bull are familiar examples of the red color and its acknowledged effects. The latter may be made therapeutically available in cases in which a distinctly exciting action on the organism or any region is desired. *Red is the nerve stimulant par excellence.* It acts upon the sympathetic nervous system and through this upon all the vegetative and more especially the animal functions of the economy. The discreet physician will have no difficulty in adapting means to the end and giving the subject of chromotherapy its proper place in clinical medicine.

The Arc-Light in Surgery.—In conclusion let me call attention to the surgical importance of the artificial sunlight produced by the arc-light. The light is a valuable

auxiliary in the treatment of wounds and injuries and an adjunct of the greatest usefulness in the practice of operative surgery.

Surgeons ought to remember that wounds under the influence of light heal much more promptly and with much less local disturbance than under the old regime when dressings of all kinds were used to keep an injured surface in darkness and in imagined cleanliness and safety. No less an authority than Esmarch stated as early as 1870 that the day would come when "the light of heaven would be resorted to not only in preserving health but in restoring the physiological and anatomical integrity of injured parts."

COMMENTS ON THE LESSON

Again we revert to one of the lessons that we have already studied. There were so many interesting comments on the question asked in May as to methods of relieving pain without recourse to opium that we continue the subject with some more quotations from papers sent in by our students. First let us quote from Dr. Fremont E. Wood, Villa Verde, Sonora, Mexico, who always has original and instructive things to say.

Relief of Pain.—He writes regarding the medicinal use of opium as follows: "The medicinal uses of opium are (first) to relieve pain. There is an impressive motto in 'The Alkaloidal Digest' most fitting to this therapeutic employment of opium. The motto is: 'Diagnose carefully, fit remedy to conditions and always push the selected remedy to effect.' In a general way, if we do not accomplish relief of pain on this principle of pushing the indicated remedy to effect there is a 'screw loose' either in our diagnosis or in our choice of remedies and applications of opium, but push up a wad of complicated pain for us or someone else to battle with conscientiously later on. It is proper to presume that the standard bearers of THE AMERICAN JOURNAL OF CLINICAL MEDICINE would most uncompromisingly condemn those of the profession whose only motto appears to be, 'Always push the hypodermic to effect.'

"In a long-ago magazine was pictured a warrior pilgrim. Burning sands, blazing suns, bitter winds, jagged rocks and thorn-lined trails, brought him defiant to the portals of princely Knighthood. He had achieved his pilgrim staff, a gnarled club, doubtless twisted from its wild fastness to do battle with some devilish Thing; and this he bore easily. I cannot recall the author of the line.

> "O, mystery of pain
> Unto thy temple fane
> With travel long and sore
> I come, nor come in vain!
>
> "Lift up thy veil and show
> What maketh weal or woe:
> My hand is on thy scourge;
> I've won the right to know!"

"We cannot conceive of power coming to the man with his hand on a hypodermic syringe charged with morphine!

"The pain of angina pectoris responds quite well to caffeine. Cactin aids; and elimination must be regularly looked after. The sleeplessness following is a minor consideration. In many cases the patient may be truthfully assured of the folly of entertaining mental anxiety over his inability to sleep; and he should be instructed to govern his habits of life to provide for such conditions of wakefulness. Certainly a mind is meagre indeed which cannot fill in a program of sleeplessness to its edification or profit. To produce sleep in a patient it is well to recognize that many cases of sleeplessness are incident to toxins in the intestinal tract. Lupulin, podophyllin and the invariable intestinal antiseptics will yield astonishing results in this behalf. This point our director has broadly covered in one of the opening paragraphs of the study:

"'We are fortunate in this for the reason that for every use of morphine that is mentioned there are other medicines which in the vast majority of cases are even more effective.'

"Emergencies may and do arise justifying the administration of an emergency dose of morphine. I do not justify myself in its administration further than its emergency application, except with an habituate.

"There is a wide range of legitimate remedies easily modified to meet peculiar re-

quirements in handling cases of sleeplessness complained of by rounders after enjoying a fiesta, bull-fight, revival of religion, or other periods of dissipation, to excuse morphine, cocaine or chloral. It were better indeed, but not ethical, to advise the rounder to make another night of it. However, emetine comes in here as worth its weight in gold.

"To lessen reflex irritation gelsemine, with systemic tonics of iron, strychnine, quinine, with the alkaloidal anticonstipation, proves effective. I cannot vouch for the accuracy of my diagnosis in names. The basis of this treatment gave benefical results. I am inclined to think ergotin has a valuable range in this direction, by what I have observed of its action. To support the system, say in cases of shock, glonoin, hot-salt enemas, or brandy applied to the back of the neck and down the spine, or an alcohol bath, having the patient's night dress saturated over the back, and retaining the volatilization by closely wrapping a blanket about him, is effective. Our Mexican mezcal is very valuable employed in this manner. Sleeplessness of sundry types, reflex irratibility, even grip, are admirably palliated by a nightly application of our mezcal by cataphoresis."

Pain of Hepatic or Renal Colic.—Dr. M. G. Rigney of Maberly, Ontario, has this to say:

"In gallstone and renal calculi the patient may be poisoned from the opium given to relieve the pain, by the obstruction suddenly disappearing, leaving the full effects of the dose to act without anything (pain) to counteract it.

"I had a good example of this about two weeks ago. I was called to Mrs. B., aged 67; was told to bring my hypodermic of morphine to relieve a severe pain in the epigastrium, as they thought the remedy would act quicker than by mouth. On arrival I found that she had already taken 1-3 grain morphine and 1-2 an ounce of laudanum but without relief and was turning and twisting in the bed with pain. I found the trouble due to gallstone impaction. I gave by the mouth, in hot water, the following antispasmodic combination: Glonoin, gr. 1-250; hyoscyamine, gr. 1-500; strychnine arsenate, gr. 1-134. This was given every ten minutes for four doses, which proved to be 'to effect.' The cheeks flushed, the throat was dry, the eyelids drooped, the pain subsided permanently. The gallstone passed through. (We searched and got it later.)

"I give the whole credit to the antispasmodic combination for relieving the spasm and allowing the stone to pass. Perhaps I should have placed some of the credit to Abbott, and to myself as knowing enough to select the proper remedy and dosing to effect—but anyway they did it.

"Had I given the hypodermic of morphine (which was asked for) along with the already large amount taken before my arrival I feel certain I should have had a dead patient instead of the highest praise of the family and friends.

"I used a hypodermic of hyoscine, morphine and cactin a few nights ago to relieve the excrutiating pain of passing a renal calculus by a man 60 years of age (a shoemaker). He begged for a hypodermic of morphine as soon as I arrived. He was almost in a state of collapse. I gave the hyoscine combination instead. Sleep followed in fifteen minutes and it lasted six hours. The pain was all gone on awakening, not even soreness left, and has remained so now for a week."

Dr. C. S. Logan, Stroudsburg, Pa., is also a believer in the use of remedies rather than morphine in biliary colic. He says:

"Given a case of biliary colic the usual remedy would be a hypodermic of morphine, 1-4 grain. I prefer to give the following: glonoin, hyoscine, strychnine arsenate and dioscorein in small doses every ten minutes till six doses have been given or relief is obtained. This is followed by a good large dose of olive oil, after which I give strychnine arsenate and hyoscyamine every hour for a few hours, depending upon the condition of the patient. I also apply hot applications to the abdomen. I have found this better than morphine."

A Case of Neurasthenia.—Dr. T. H. Line, Marquette, Nebr., gives a very inter-

esting account of his treatment of neurasthenia, occurring in a young schoolgirl. Dr. Line is a resourceful, sensible physician, and we quote from his letter in full:

"The case referred to occurred in a young schoolgirl of sixteen who, owing to hard study and improper or no food and loss of sleep, became anemic and showed every sign of malnutrition. There was a constant pressure on the head or a feeling that there was a load there too heavy to carry. Mental work was entirely impossible and about all the patient did was to sit up and worry over her condition day and night. The appetite was poor and the bowels while not constipated were not very active. The secretions all seemed to be suppressed. The eyesight was impaired and melancholic symptoms bordering on mania were present.

"The patient was given a 'clean-out' treatment in the strictest sense; she was thoroughly purged and given diuretics that caused copious secretions from the kidneys, and given first a vapor-bath, then a hot-water bath, followed by brisk rubbing with salt and after this a tepid or cold-water sponging. Then I put the patient to bed, and as this patient would not sleep I tried a new wrinkle. The patient was fond of music, so I had her moved into the room and close to the piano and had a musician play softly for a while, and inside of fifteen minutes she slipped off into a refreshing slumber that lasted four hours. Taking this as a cue I had her entertained almost constantly for two or three days or until she began to take an interest in things. Tonics were given and the diet mostly of fruit and milk. This, with entire abstinence from mental work, effected a cure in four weeks."

A Case of Insomnia.—Dr. M. Shadid cites a case and asks for information and says: "A man about 80 with fetid bronchitis and mitral regurgitation applied to me for relief from insomnia. I gave a milligram of strychnine arsenate and two milligrams of digitalin half an hour before retiring. This relieved the insomnia to his great delight. Ten days or so later he came back for some more pills, which I gave him. A few days afterward I was called about 9 a. m. to see him and found he had been dead for six or eight hours. Did the digitalin kill my patient?"

If there was failing compensation of the heart digitalin was unquestionably indicated, but if there was marked arterial degeneration, which might have been the case in a man of 80 years of age, the digitalin if given at all should have been associated by some vascular relaxant. Many physicians give digitalin in every case of disease of the heart, but it is well to remember that the drug is not indicated in cardiac disease unless there is failure of compensation, with sound arteries. In failing compensation, digitalin is usually the ideal remedy.

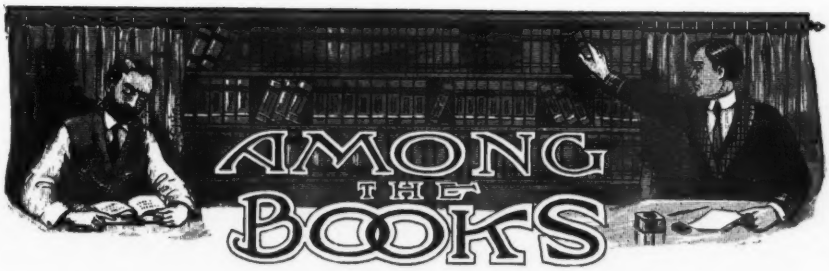
We do not believe that in the case cited by Dr. Shadid that the doses given of strychnine arsenate and digitalin caused the death of his patient, although as we have said if there was high arterial tension and degenerated blood vessels the increased blood pressure resulting from the remedies might have had some unfavorable influence.

EXAMINATION QUESTIONS

1. What is a restorative? What an alterative? Differentiate between the two.
2. Mention a number of remedies which may be classified as restoratives. Several alteratives.
3. What is a hematic, and name several. Tell how iron acts remedially.
4. Enumerate six or more preparations of iron, telling their composition, dosage and special indications.
5. What are the principal contraindications for iron? Principal indications?
6. Describe a case in which you gave iron, with complete outline of treatment.
7. What is meant by the solar spectrum?
8. What is the difference of action between the heat rays and chemical rays?
9. What is the Finsen lamp and its therapeutic uses?
10. What is the Minin light, and where is it useful?

RESEARCH QUESTIONS

1. What are the relative advantages and disadvantages of organic and inorganic iron preparations?
2. What is the content of iron arsenate in (1) iron and (2) arsenic? Calculate dosage on this basis.
3. What is chlorosis? Tell something of its etiology and outline a method of treatment.
4. What is the amount of iron in the human body, and in what form is it found, and in what tissues?
5. Outline the method and route of absorption and assimilation of iron, giving common theories concerning method of action.



PACKARD'S "DISEASES OF THE NOSE, THROAT AND EAR"

Text-Book of Diseases of the Nose, Throat and Ear. By Francis B. Packard, M. D., of the Philadelphia Polyclinic Hospital. Philadelphia and London: J. B. Lippincott Company. 1909. Price $3.50.

A very desirable book for the general practician. The author, as a teacher in the Philadelphia College for postgraduates, must have gathered abundant experience of the difficiencies of practising physicians in the knowledge of nose, throat and ear diseases and so endeavored to and succeeded in supplying the needs of physicians in this respect. Besides, the book is written most recently and of course contains the latest and best-tried in diagnosis and treatment and instruments. Some chapters of the book won the writer's especial admiration, as for instance the one on hay-fever.

ZIEGLER'S "GENERAL PATHOLOGY"

General Pathology. By Dr. Ernest Ziegler, of the University of Freiburg. Translated from the eleventh revised German edition, edited and brought up to date by Alfred Scott Warthin, Ph. D., M. D. With 604 illustrations. New York: William Wood & Co. 1908. Price $5.50.

Ziegler's "General Pathology" has always had, and so has in this last edition, the great merit of summing up the results of the great researchers, of the workers in medicine, and while the book expresses the author's views of assent to or dissent from the views of others, it is preeminently objective in giving their views. It is for this reason that this book is considered a standard and safe textbook in this part of medical knowledge.

DIEUDONNE'S "PTOMAIN POISONING"

A Concise Exposition of the Etiology, Bacteriology, Pathology, Symptomatology, Prophylaxis, and Treatment of Socalled Ptomain Poisoning. By Prof. Dieudonne of Munich. Translated and Edited with Additions by Dr. Charles Frederick Bolduan, of New York. New York: E. B. Treat & Co. 1909. Price $1.00.

A most desirable book on an extremely interesting and important subject. The author is thoroughly familiar with the subject and has produced a book which is certainly reliable.

THE INTERNATIONAL MEDICAL ANNUAL

The International Medical Annual: A Year Book of Treatment and Practitioner's Index. Twenty-seventh Year. New York: E. B. Treat & Company. 1909. Price $3.50.

For the progressive, studious and faithful physician whose first aim in life is to render the best service to the patients committed to his care but who is linguistically limited to the English language alone this Annual, Book of Treatment and Index for 1909 is not a mere professional luxury but a really imperative necessity. The thirty-seven contributors to this work have gathered reliable information and tried procedures from all parts of the world, and the range of subjects

treated of here certainly covers all that a general or special practician is likely to meet with in his practice in medicine and surgery. No new and important topic that came up for discussion in medicine last year is here omitted.

KELLEY'S "SURGICAL DISEASES OF CHILDREN"

Surgical Diseases of Children. A Modern Treatise on Pediatric Surgery. By Samuel W. Kelley, M. D., of the Cleveland College of Physicians and Surgeons. Illustrated. New York: E. B. Treat & Company. 1909. Price $5.00.

A monograph of unusual value in a field in which every physician and surgeon is called upon to work every day, on patients with distinct pecularities and susceptibilities. Yet this is a field in which, *mirabile dictu*, even in our age of no end of making books, there are very few books. Dr. Kelley's book is exhaustive on the subjects it treats, reads easily and attractively and seems to have been written *con amore*. It contains 765 pages, including an index of 27 pages. We have not the fortune of knowing the doctor personally but we venture to guess that he loves children and is loved by them, that is to say that he is a natural pediatrist and therefore peculiarly fitted to write such an excellent book on the subject.

ROBARTS' "PRACTICAL RADIUM"

Practical Radium. By Heber Robarts, M. D., Founder and Editor of *The American X-Ray Journal*. Published by the Author at 5899 Cates Avenue, St. Louis, Mo. 1909. Price $1.00.

The book is a well-illustrated treatise on the practical uses of radium in baffling forms of disease. At the same time the author gives an interesting history of this remarkable substance. The handling of this remedy demands instruction which the author is at pains to give clearly and efficiently. The author is a practising physician in St. Louis and gives a large list of his regular fellow physicians there to whom any one who needs his service may refer about him. The book impresses us with confidence in the doctor's scientific ability and professional integrity.

MITCHELL'S "NERVOUS WOMEN"

Self-Help for Nervous Women. Familiar Talks on Economy in Nervous Expenditure. By John R. Mitchell, M. D., of the College of Physicians of Philadelphia. Philadelphia: J. B. Lippincott Company. 1909. Price $1.00.

A book very much in place, time and sex, for we have not reached yet the acme of the evils through which we are passing. Every thing of social potency tends to deprive us of faith in the higher powers that can sustain us in the struggle for a proper existence which is legally and conventionally accorded to the surviving fit ones only, who fit themselves by overcoming the unfit weak ones. In one point one could wish the author to have urged as a remedy to our nervous evils, to wit, that our theologians should study more of medicine and our medical men should study more the values of religion for bodily health.

CHAPIN'S "INFANT FEEDING"

The Theory and Practice of Infant Feeding. With Notes on Development. By Henry Dwight Chapin, A. M., M. D., of the New York Post-Graduate School and Hospital. Third Edition. Revised, with Numerous Illustrations. New York: William Wood and Company. 1909. Price $2.25.

Nothing but the highest praise will do justice to this book, for in its pages the author gives an almost exhaustive treatise of the entire subject. The subject of milk takes up the greater portion of the work; and rightly so, for breast-fed infants are becoming more and more rare. Our "advanced" women are drying up, but our cows, thank God! are not. The question of healthy cows' milk forms a very large chapter in the literature of infant-feeding. But the price of healthy milk is constant vigilance. And the vigilance of whom, if not the school-

or the self-educated physician? It is to be remembered that our civilized murderers are not the highwaymen only, nor do our civilized thieves always have to break in at night and steal; they can do it more politely.

If, therefore, a physician wishes to have an intelligent, real notion about milk, what it is and what it becomes outside the cow's udder, we advise him to procure Dr. Chapin's book. Let him not rely on the milk-seller's ethics. Despite the denial of sin by some of our "progressive" religious sects, the old sinner perpetrating his sinning on his fellow men and innocent little babes is not eradicated by the fashionable "all-mind-and-no-matter" process of eluding its dupes. Galactology ought to constitute a course in the medical curriculum even if it should displace some other ornamental study. Meantime instruct yourself at the hands of this book.

WALTON'S "WHY WORRY?"

Why Worry? By George L. Walton, M. D. Philadelphia and London: J. B. Lippincott Company. 1909. Price $1.00.

An excellent tract for those who have nothing to worry about, but next to a cruel mockery for those that have much reason to do it, and they are in the majority. Worry is only excessive care.

GRAY AND SLAUGHTER'S "REGULATION OF SEX"

A True Method of Regulating the Sex of Children, and the Importance of Doing So. With a Chapter on the Necessity of Having All Male Children Circumcised. By Alexander W. Gray, M. D., and R. M. Slaughter. Published by A. W. Gray, Pauls Valley, Okla. Price, postpaid, $1.00.

This monograph contains thirty pages filled with thoughts that many who call themselves "progressive" would unhesitatingly reject, because it constantly refers to the Bible as ancient authority. That such a mode of thinking loses much of ancient lore should go without saying, but much of that kind has to be said often and again. The writer does not hesitate to say that this pamphlet contains many valuable truths in the form of mental food to be chewed, digested and assimilated. The author seems to be an earnest, honest, plodding, old-fashioned physician whose kind is getting rare and hence the more valuable.

MILLER'S "COSMETIC SURGERY"

Cosmetic Surgery. Second Edition. By Charles C. Miller, M. D., Chicago. Published by the Author. Price $1.50.

The first edition of this small but important work appeared under the title of "The Correction of Featural Imperfections," but for the present enlarged edition the author has substituted the one shown above. Surgical cosmetics embraces a new line of work, but is one which promises to attain to the deserved dignity of a surgical specialty. It is to be hoped in the near future a still more elaborate and more fully illustrated edition may be brought out by Dr. Miller. The reviewer suggests a "Handbook of Cosmetic Surgery," to serve as a guide to enterprising young as well as never-aging surgeons. Cosmetics is not necessarily vanity, and may even be a virtue.

BRICKNER'S "SURGICAL SUGGESTIONS"

Seven Hundred Surgical Suggestions. Practical Brevities in Diagnosis and Treatment. By Walter M. Brickner, M. D., Eli Moschcowitz, M. D., and Harold M. Hays, M. D. Third Series. New York: Surgery Publishing Company. 1909. Price $1.00.

THE CLINIC paid due praise to the first issue of these "Surgical Suggestions," in 1906, and equally so to that brought out for the year 1907, and it is only doing justice to the present compilation by repeating here what was said before.

Readers of *The American Journal of Surgery*, and all others who have enjoyed the admirable "surgical suggestion's" which have appeared monthly in MacDonald's ably edited and progressive publication, will be pleased to know that these have been col-

lected, classified, and finally reprinted in book form. The little volume before us is in every way admirable. Typographically it is an edition de luxe in miniature; the items are collated in a form which renders them very easy of reference; and the material itself, though very much condensed, supplies just the practical facts of which the busy physician stands most in need in cases of emergency. We congratulate the authors upon their success in getting together such a splended collection of practical brevities and the publisher upon the quality of his venture. Every reader of CLINICAL MEDICINE should secure a copy.

STATE-BOARD EXAMINATIONS

Answers to Questions Prescribed by Medical State Boards. By Robert B. Ludy, M. D. Third edition, rewritten and enlarged. Philadelphia: Jos. McVey. 1907. Price $3.50.

It is not the "donkey's bridge" for the incapable or neglectful medical student, but a great help for one who has profitably employed his years in the study of medical subjects and who is called upon now to prove his attainments to those who are authorized to license him to practise.

BAILEY AND MILLER'S "EMBRYOLOGY"

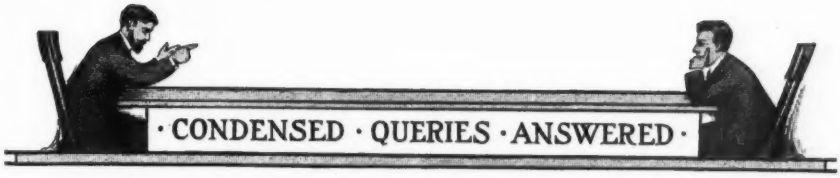
Text-Book of Embryology. By Frederick Randolph Bailey, A. M., M. D., of the Medical Department of Columbia University, and Adam Marion Miller, A. M., of the same university. 515 Illustrations. New York: William Wood & Co. 1909. Price $4.50.

A most remarkable book. Exhaustive of that wonderful subject to the last points at which indefatigable scientific workers have arrived in our day, the authors having made their work still more attractive by pointing out at every step its practical application for the thinking physician. Some thousands of years ago the royal poet of Israel of old was attracted by this wonderful embryology, and sang of the undifferentiated mass of "substance" as it went on and on, differentiating and designfully, Ps. 139: 15, 16. And it was only last century that Karl Ernst von Baer published his epoch-making "*Entwickelungsgeschichte der Thiere*," (Königsberg 1828-1837) which laid well the foundation of modern embryology. And it was the ever busy beelike worker Rudolph Albert Kölliker, who published his "*Entwickelungsgeschichte*" in 1861 and over which the present writer poured over many an hour of study in the sixties. What an amount of scientific work has been done in embryology since then, which is well summed up in this grand work of Professors Bailey and Miller, teachers in the very school in which we graduated. We can not say too much in laudation of this book. We have often wished, when reviewing thorough books like this one, to have the opportunity of distributing their tables of contents so as to give to many a better inkling of what such a book is. Let publishers at least do it, and the publishers of this book especially. They have given us a fine piece of work, mechanically matching the author's mental work.

WINTER'S "GYNECOLOGICAL DIAGNOSIS"

Text-Book of Gynecological Diagnosis. By Dr. George Winter, of the Koenigsberg University Gynecologic Clinic, with the Collaboration of Dr. Carl Ruge of Berlin. Edited by John G. Clark, M. D., of the University of Pennsylvania, after the Third Revised German Edition. Illustrated. Philadelphia and London: J. B. Lippincott Company. 1909. Price $6.00.

A magnificent and thorough work by a scholarly American, who heartily appreciates German scholarship and diligently follows the teaching of the eminent men who represent it. The book comprises more than 650 pages of large octavo size. The numerous illustrations, partly colored, do illustrate and are finely executed. The minuteness and detail of the teaching will be appreciated by the general as well as by the special practician when with reference to some case in hand he may resort to these pages for consultation. A word of praise is due too to the publishers who unstintingly supported the authors of the text.



PLEASE NOTE

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report the results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

QUERIES

QUERY 5451.—"Removal of Tapeworm from Children." W. R., Pennsylvania, writes: "Which do you consider the best preparation of pomegranate root? I have had a failure in trying to remove a tapeworm from a child three years of age. I have used granatine at different times. About two months ago I got about 30 feet, last week 20 1-2 feet, and today I tried again, but I think I shall meet with failure again."

Various alkaloidal salts of the root-bark are on the market, the most popular being the tannate. This alkaloid is called pelletierine, but also is known as punicine, Most of these preparations are in combination with pseudopelletierine, a natural impurity. Pelletierine tannate often proves quite efficacious, that known as "Tanret's" being considered specially reliable.

But, Doctor, the best combination according to our experience, is one having the following formula: Oleoresin male fern, drs. 2; chloroform, drs. 1 1-2; croton oil, gtt. 4; castor oil, q. s. ad ozs. 2. But everything depends on the quality of the ingredients. The usual mode of giving is as follows: Stand the bottle containing it in a vessel of hot water until it is heated through. Into a previously warmed cup pour an ounce or two of milk, just hot enough to be swallowed comfortably, and on this pour half the medicine. Let the patient swallow it and immediately drink some plain hot milk from another cup. In this way the medicine is not tasted. Two hours later give the other half of the dose in the same way. If the bowels do not move briskly, bringing the parasite in two hours or a little longer, then give a good-sized dose of castor oil. The stools should be voided into a pail of warm water so that the worm may float up; and if it remains pendent from the bowels, have it wound gently about a stick or twisted paper, as you would wind tape upon a bobbin. This avoids breaking off the head and one or two segments of the neck. If this should happen, there is likelihood of another full-grown worm again in three or four months. *To patients under 12 years of age give half the above doses*—one dose even often suffices when the patient is very young. The medicine may be given in soft capsules.

Koussein is also a useful tenifuge for children. The dose is from 1-2 to 2 grains taken on an empty stomach. Infants require from 3 to 4 milligrams.

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QUERY 5452.—"Suppurating Anus: Otitis Media." H. W. S., Saskatchewan, Canada, is treating two stubborn cases, viz.:

"Case 1. Male, age 56; good constitution; had what seemed an ischiorectal abscess. I took him to the nearest hospital, opened up, but found no pus. The hospital physician cleaned the wound with hydrogen dioxide and packed with iodoform gauze. The patient was sent to me for local treatment twelve days later. I found a discharging sinus, narrow but deeper than the original incision. I curetted and swabbed with

dilute carbolic acid, and applied pressure on outside. I put him on alkaloidal treatment. The watery secretion kept up and so I curetted again. The opening now is only the size of a darning needle and oozes about five or six drops a day. It is close to the rectum, but there is no connection. Can find no bone disease. The man is apparently in good general health.

"Case 2. This is a stubborn case of suppurative otitis. I cleaned out with hydrogen dioxide and used thymol iodide in oil locally, besides the indicated alkaloids to build up the system. It seems impossible to get the ear thoroughly cleansed. I note a tinge of blood on the cotton, though great care is used in introducing dressings."

In the first case you will probably effect a prompt healing of the sinus by some such course as this: Clease thoroughly with pure hydrogen dioxide, wash out the foam with warm boric-acid (or better still, chinosol) solution, dry, and then insert a fine, well-scrapped copper wire, and first dipped in a solution of soda, which is attached to the positive pole of the galvanic current, while a large wet pad attached to the negative pole is applied to the buttocks, over the abdomen or back. Turn on a good current gradually, moving the wire gently until you can perceive a green deposit on the tissues. Repeat every second or third night. We do not think you will have any further trouble after the fourth dressing. If you do, inject Beck's bismuth paste (page 44, A. J. C. M.). Suppurative otitis is a stubborn proposition. Saturate the patient with echinacea and calcium sulphide and after cleansing with pure hydrogen dioxide, dry, and pack lightly with a piece of gauze saturated with ichthyol. If we had a clearer idea of general and local conditions in the otitis case we might be able to help you further. The ear is a delicate organ and treatment needs to be precise. Let us suggest that both your patients receive the triple arsenates and nuclein, in full doses, for some time.

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QUERY 5453.—"Phlegmonous Tonsillitis." S. K., Illinois, is treating a young man, suffering from quinsy for the past four weeks. Both tonsils broke down into a mass of pus and there was great pain in swallowing. Nothing tried has had any decided effect, although the patient is getting better very slowly. The doctor calls it "the ugliest case he ever met with." He wanted to try calx iodata, but was afraid because of the iodism it might cause. Urine is normal; no taint of any kind, so far as known.

Push echinacea, calcium sulphide, mercury biniodide and nuclein, in combination with strychnine arsenate and phytolaccin. Have the patient gargle with solution of hydrogen dioxide diluted with three parts of water. Then apply direct to the area involved a saturated boric-acid solution; also a combination of glyceride of hydrastis, carbolic acid and iodine. You will find the formula for this preparation in any late work on nose and throat diseases. Tincture of iodine, compound, 1 part, glycerin, 3 parts, also may be applied.

Keep the bowels open with salines, and every other night exhibit a good hepatic stimulant. Better have a little of the discharge examined if it does not disappear promptly under this treatment.

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QUERY 5454.—"Multiple Abscesses." A. D. C., Wisconsin, in counsel with another physician, has repeatedly seen a patient who has multiple abscesses. He has opened forty-seven so far. The man, some thirty years of age, started off with a rectal abscess. Our correspondent advised calcium sulphide, intestinal antiseptics, strychnine, and plenty of nourishment. These he has been getting. A few days ago he asked the physician in charge what the thought of using nuclein hypodermically, but was told he knew nothing of it. The doctor concludes: "From this brief history, would you think nuclein advisable? You see, I am really the only active-principle man in town and it seems so hard to get the other fellows to realize what our drugs *can* do."

By all means use nuclein in this case, hypodermically, if you can, otherwise have it absorbed from the buccal mucosa, ten drops morning, noon and night, adding echinacea to your other excellent treatment. Give 1-3

of a grain four times daily, or even larger doses. Inunctions of unguentum Crédé might prove useful in this case. We also suggest that you wash out each abscess with hydrogen-dixoide solution, then swab with carbolic acid (pure), neutralizing with alcohol; then dress with ichthyol. The arsenates as reconstructants.

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QUERY 5455.—"Hypodermatic Use of Nuclein." W. S. W., Missouri, in a most interesting letter states that recently the hypodermatic use of nuclein has caused a good deal of pain in his practice, and afterward a rather extensive cellulitis. As he uses this preparation almost exclusively by the subcutaneous method this is rather a serious objection. He also objects that different bottles differ in appearance, one being quite a pronounced straw color, another much lighter. He has several case reports relative to the good effects of nuclein hypodermically in diabetes mellitus apparently due to or associated with defective cell function, which open up an interesting field for study.

While there is a certain amount of smarting following the subcutaneous injection of nuclein we have not had the serious results of which the doctor complains. Let us suggest that he use an all-glass syringe and try again. If patients are sensitive we would advise that the nuclein be diluted with an equal quantity of decinormal salt solution. Always warm the solution before using, by standing the container in a vessel of warm water; it should be injected at body temperature. If these precautions are adopted we are sure that the doctor will have no farther trouble.

Bear in mind that nuclein may be given under the tongue and that it is absorbed readily from the oral mucous membrane. It is rather a difficult thing to secure and maintain a constant color. Exposure to the air will give it the straw color you mention, but its efficacy is in no wise lessened.

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QUERY 5456.—"Rectal Ulcer." J. H. M., Kentucky, describes a case of rectal ulcer. A man, age 34, has a large rectal ulcer on the posterior surface of the bowel about one and one-fourth inches within the rectum. It is of about three years' duration and caused by constipation, from which he is now recovered. His general health is good. The ulcer seems to get better at times and then worse again. There is no sign of cancer. The doctor concludes: "I am much anxious for all the help I can get in this case."

Rectal ulcer usually requires dilation of the sphincter. Expose the ulcer, thoroughly cleanse with hydrogen dioxide, dry, paint with pure turpentine and then apply thymol iodide in a vegetable oil upon a pledget of cotton, which will, of course, be later extruded with the stool.

The bowels must be kept loose and you should push calcium sulphide and the sulphocarbolates together with reconstructives, such as the arsenates, nuclein, etc. If the ulcer is of a tubercular character or syphilitic, specific treatment must be instituted. Suppose you give us a clear clinical picture and send a specimen of the man's urine, a scraping of the ulcer, and a specimen of the stools? Our pathologist will examine and report—then we shall be able to aid you more effectively.

The dressings described above must be renewed daily if you wish to control the disease. The writer has found thuja and echinacea, equal parts of each, a very excellent application in the later stages. One point more: Remember that what appears to be an ulcer really may be a fistula, and careful physical examination should be made to determine the *exact* diagnosis.

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QUERY 5457.—"Cicutine." F. S., Iowa, is not familiar with cicutine and asks: "What is the best method of administration?"

Cicutine (or coniine) is the active principle of conium maculatum (spotted hemlock). It acts through the spinal cord as an antispasmodic and relaxant. The hydrobromide is its best preparation, being somewhat more soluble than the alkaloid, and more permanent.

Of this, one milligram or one-half milligram of the alkaloid may be given every half-hour until effect. Its action is similar to

that of gelseminine, the latter acting more upon the upper portion of the cord and the ganglia at the base of the brain; the center of cicutine's activity being situated lower. It is particularly indicated in painful menstruation of functional origin, used as directed above. It may be combined with hyoscyamine, atropine, aconitine or morphine, sometimes properly with strychnine, by either of which, under suitable conditions, its action is intensified. It is claimed to specifically remove the sense of apprehension of impending insanity; and all our observations and reports on this point favor the claim.

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QUERY 5458.—"The Drink Habit." J. W. S., California: "Will you please give me the technic for the treatment of the drink habit. What drug, and what strength, is used in the hypodermic usually given for about six days at 8, 12, 4 and 8 daily? Please write me a prescription for treatment at home during the month the patient is under your care. What drug is used to 'dope' the whisky with and how long do you expect the patient to 'like' it after treatment has begun?"

The beginning and end of the treatment is elimination. Unload the liver. Podophyllotoxin is probably the best remedy for this purpose. It should be given to full effect and repeated until the bowels are completely unloaded and the weight of toxins oppressing the liver has been thrown off.

The hypodermic used to render alcohol unpleasant is atropine, or one of its close relatives, the object being to cause such a fulness in the cerebral vessels as will render the action of alcohol, which increases that condition, unpleasant. The best remedy to secure sleep at night is emetine, one grain of amorphous emetine, or 1-12 of a grain of the pure alkaloid, at bedtime, taking all precaution to insure slow absorption and retention of the drug. Give podophyllotoxin, a granule every two hours, with a dose of saline laxative on rising.

The remainder of the treatment consists mainly in carefully arranged diet, avoiding an excess of nitrogenous foods, but giving such articles as the weakened digestion can manage; and in suggestion. Apomorphine is often used to "dope" the whisky, but it is a mistake, since when administered by the stomach it does not cause nausea. Better is the Keeley method, in which the patient is given a hypodermic of apomorphine and immediately compelled to drink a large glass of whisky. The apomorphine then does the work and the patient blames it on the whisky. If necessary to dope the whisky use lobelin or tartar emetic. For the depression following the disuse of alcohol strychnine has largely been used. Strychnine arsenate is the best salt. I am firmly convinced, however, that if elimination is complete and is sustained and continued as it should be there will be little need for stimulants of any description.

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QUERY 5459.—"Locomotor Ataxia or Ascending Paralysis?" R. E. S., Alabama, reports the case of a man, aged 38, afflicted with multiple neuritis, paralysis now having developed in both legs. He is giving lecithin and strychnine arsenate. Has tried the various preparations of the iodides, but his stomach will not tolerate them. The attack came on slowly. The man has been confined to his room for six months, able to get around only with much difficulty upon crutches.

It is not safe to prescribe in a case of this kind without having a much clearer presentation of this man's physical condition. We ought to have a complete clinical picture and also some idea of his prior history. Is there a possibility of venereal, tubercular or alcoholic origin? Lecithin is indicated in such cases, as also is nuclein, but, as you are well aware, Doctor, one can do very little unless he understands the underlying pathological condition. Are the nails brittle? Is atrophy marked? Have there been ataxic symptoms? Is pain present to any extent?

In case there is pain, try small doses of hyoscine and morphine with the addition of pilocarpine, and caffeine arsenate in dosimetric doses. The best absorbent combination is, unquestionably, that of mercury, arsenic, iodoform and phytolaccin. This

may be alternated advantageously with iodized calcium and nuclein, one dose every three or four hours during the day, alternating day and day about. Lecithin may be given between meals, and nuclein morning and night under the tongue. The bowels must be kept well open, the kidneys maintained active and the skin should be sponged daily with carbolated epsom-salt solution. This treatment is basal in character but may prove efficacious.

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QUERY 5460.—"Eclampsia, Phlegmasia and Falling Eyebrows." C. O. R., Mexico, submits the following:

"1. The patient, a woman of 30, multipara, history of eclampsia in last confinement. Now four months pregnant; fears eclampsia in next confinement. Has pains in different parts of body especially in feet and legs which are somewhat swollen. Urine 1020; no albumin. Very fat and florid. What is best treatment to avoid eclampsia? How often and how much of the veratrine could I give her if the convulsions came on? How could I know when she has taken enough?

"2. How can I take swelling and pain out of a leg? Disease five years standing from phlegmasia alba dolens. Veins somewhat varicose, not very much so; leg is about 25 percent greater in size than other leg. Woman rather stout. Many children; last one five years ago. Menstruates regularly but rather scantily. Lower part of leg pits on pressure. Pain over region of kidneys. Right leg swollen and painful; left leg normal.

"3. Is falling out of eyebrows from syphilis ever unilateral? A young man here with no ascertainable syphilitic history has lost rather more than half of eyebrows over eft eye. What is it probably from and what is the best treatment? He had gonorrhea about six months ago and now has small bubo resulting probably from that on left side, but falling off of eyebrows was before the gonorrhea."

1. Put her on a diet of buttermilk, one or two quarts a day; see that her bowels are thoroughly emptied and kept so; give her veratrine half a milligram two to seven times a day according to her vascular tension, bringing that as nearly as possible to the normal point and sustaining it there. If her pulse is low in tension give sparteine and digitalin enough to equalize it. Restrain her in the use of liquids and drain away water by enemas of saturated salt solution. Massage the legs daily. If convulsions occur give enough veratrine to reduce pulse to normal tension, which is the best indication; if you give by the stomach stop when it causes nausea and you are well on the safe side as to the remedy, but her condition may require more. It is not a dangerous remedy.

2. The debris left after such an attack may be absorbed, and absorption is favored by prolonged massage, the application of mercurial ointments and the administration of absorbents internally. The most powerful of these is the combination of arsenic iodide one milligram, iodoform and phytolaccin a centigram each, and mercury biniodide three milligrams; this dose to be taken three to seven times a day, until irritation of the eyelids denoted beginning toxic action, then slightly reduced and continued for months just below the irritation point.

3. Syphilitic alopecia being usually local and partial, it may be unilateral. If not syphilitic it is dependent on local mycosis, and should be treated by applications of antiseptics, with pilocarpine internally in full dose three times a week.

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QUERY 5461.—"Hypodermatic Dosage of Morphine." G. W. S., Kansas, writes us for information as to "the largest dose of morphine that a physician dare give hypodermically." He says: "I have recently had an argument with another physician on this matter. A patient injected supposedly 1 1-2 grains of morphine or six 1-4 grain tablets were dissolved and injected. Of course serious results followed, but not death. Do you think that that amount would cause death or would it require a larger dose? I claim it would take more than 1 1-2 grains hypodermically but I am of the opinion that if morphine had also been taken internally it would have increased its

danger. I have never met with this accident before, which possibly was with suicidal intent. Suppose strychnine had been given hypodermically with morphine. I presume the spasms of strychnine would have been overcome by the morphine. I desire your opinion on this matter as Wood's 'Therapeutics' does not fully state the maximum (hypodermic) dose. I would like your opinion also as to the action of morphine and strychnine hypodermically."

The lethal dose of morphine cannot be very definitely fixed; 1-2 grain has destroyed life and one grain very frequently proves fatal. On the other hand as much as five grains has been taken hypodermically and the patient recovered. A physician rarely gives more than 1-4 grain of morphine hypodermically save to a habitue but he would repeat this dose, if necessary, and he might even give a third injection.

Remember that medicines given hypodermically can never be withdrawn so that here especially the small dose repeated to effect applies. The internal dose of morphine would not be as likely to prove fatal as the hypodermic one. Absorption would be slower and elimination could be secured. Moreover a large dose would be quite likely to cause vomiting.

If strychnine were given with morphine, which is unusual, it would have the effect of improving cardiac tone, preventing secondary depression from the morphine. On the other hand to a certain extent morphine is antidotal to strychnine. In poisoning by strychnine and morphine (a very unusual thing) the symptoms and results would depend entirely upon the amount of drug taken and upon the preponderance of one agent over the other.

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QUERY 5462.—"Gastric Catarrh." E. J. F., Mexico, asks an opinion on the case described herewith: J. R., female, aged 40, married, one child born fifteen years ago, at present *enceinte* five months. For many years she has suffered from copious discharges of mucus from the bowels, some vomiting of mucus, all food causes distress, diarrhea alternating with constipation, pain over the abdomen, and constant headache; tongue is always clean and normal. She was formerly stout, but now is very thin. She has nasal catarrh. Formerly she was a great meat eater; but at present she is eating 'slops.' Diagnosis, catarrh of stomach and bowels. Treatment saline every morning, sulphocarbolates, soda and pepsin after meals, also copper arsenite. Lavage of intestine with various antiseptics. Also gave strychnine by mouth. No relief. Patient is a Mexican and has a very cachectic color. Do you think there is any cancer about her? I find no signs of a growth and she has never had any hemorrhage."

We dare not prescribe for this case with our limited idea of conditions, but we are inclined to think your diagnosis correct. Examine the abdominal organs carefully. Of course you cannot do very much at the present time, in fact any really effective treatment will have to be instituted after delivery. You might with advantage, however, wash out the stomach with peroxide of hydrogen solution, one part to four of water, following with a weak boric-acid solution, then place the woman on hydrastin, juglandin and collinsonin, giving these with a little hot water on an empty stomach three times a day before meals; papayotin, charcoal and soda after food. High emenata of a solution of calendula and hamamelis one-half ounce of each to the pint are also suggested. These measures should not in any way affect the uterus or fetus.

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QUERY 5463.—"Quinine Inunctions." G. W. H., Oklahoma, has been told that quinine sulphate is not adapted for mixing with lard or other oils for rubbing in under the arm or in the groin, and he wants to know if this is true, and in what form he should use quinine for inunction.

The statement is certainly true in the main, though physicians *do* use quinine sulphate in this way, with apparent success in some cases. The *salts* of quinine are not soluble in oils, but the basic alkaloid is. It may be mixed with equal parts of lard and lanolin, in suitable dosage, remembering that very much more of the remedy (probably

four to five times as much) is required to get results when it is to be rubbed through the skin. The *oleate* of quinine, an official preparation containing 25 percent of quinine is the preparation best suited for external use. It may be rubbed into the skin pure, though if the integument is sensitive, as in children, it may better be mixed with lanolin in a 50 percent-ointment.

An excellent way to give quinine to children or to persons with sensitive stomachs and hypersensitive taste-organs, is by suppositories, with cacao butter. The hydrochloride of quinine should be used and the dose double that taken by the mouth.

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QUERY 5464.—"Irrigation of Male Urethra." J. W. H., Washington, asks us to describe the simplest and most practical way of thoroughly irrigating the male urethra. He desires a remedy for alkalinity of urine and also wishes to know whether the bile salts would be useful in typhoid.

Irrigation of the male urethra is really a very simple matter. The Valentine or similar apparatus will prove most satisfactory. The Janet method is described in any work upon genitourinary diseases; in fact, Doctor, we would urge you to read up on this matter. You will find irrigation thoroughly dealt with in Keyes' "Genitourinary Diseases" (Appleton). There is a very vast difference between irrigation and injection, irrigation being used early in diseases.

In the Janet method a suspended tank, capable of holding a quart of fluid, a rubber tube attached, a set of two-way nozzles, some small soft-rubber catheters (15-20 French) and a shut-off are required. The shut-off instrument clasps the rubber tubes attached to the nozzle and by a scissors-like motion, impeding the outflow as the fluid enters the urethra distends the canal, and impeding the inflow when the urethra is filled, allows the canal to empty itself. Proper distention of the urethra is secured by an elevation of the reservoir two to three feet. Such an elevation will not force the fluid into the membranous urethra.

The special nozzles, shut-off, etc., are not essential, a simple glass nozzle with a protecting collar being all sufficient. A 1 to 6000 solution of potassium permanganate (3 grains to one quart of water) should be made fresh for each irrigation and poured into the tank. The patient, having urinated, protects his clothing by holding a basin. The nozzle is introduced into the meatus (being filled with solution) and the current allowed to distend the canal slowly. When a simple nozzle is used, as soon as the canal is distended the cut-off is applied and the nozzle withdrawn and the fluid allowed to flow out, this being repeated until the tank is empty. After the first two or three treatments the strength of the solution is increased to 1-4000.

There are two methods of irrigating the deep urethra:

1. Introduce a soft-rubber catheter, boiled and lubricated, into the urethra until it reaches the bladder, a fact indicated by the out-flow of a few drops of urine. As soon as these appear withdraw the catheter a half inch or more so that its eye rests in the posterior urethra. Now inject, by means of tank or hand syringe, as much as the bladder will hold (from 200 to 500 Cc) of 1-4000 permanganate solution heated to about 110°F. This washes the posterior urethra as it flows in, and again when, after withdrawal of the catheter, the patient urinates it out.

2. The whole urethra may be irrigated without a catheter by forcing the cut-off muscle. This is not always an easy task (indeed, with some hypersensitive urethras it is impossible), and, in order to accomplish it, the patient had best be made to assume a reclining position, relaxing all his muscles. It is also useful at first—when the patient is unaccustomed to the treatment and likely to resist instinctively—to anesthetize the anterior urethra by an injection of 1 to 200 cocaine solution. In most instances, a few treatments by this method suffice to tame the urethra, after which the cocaine may be omitted and then the injection administered with the patient sitting or standing up.

The irrigation may be administered from a tank hung 4 to 6 feet above the level of the bladder, but it is often easier, besides being

safer, to employ a large piston syringe, with heavy, blunt nozzle to fit the meatus. In using this, however, the utmost delicacy of pressure must be employed, since excessive force excites a contraction of the cut-off muscle and only frustrates its own purpose. Holding the syringe in his right hand, the surgeon inserts its nozzle into the meatus, and with his left hand, crowds the glans penis tightly around it, so that no drop of fluid shall leak out, and gently depresses the piston; the anterior urethra is readily distended, and then a sense of increased resistance announces that the barrier of the cut-off muscle has been reached. Gently and cautiously the pressure of the piston is increased and the patient instructed to breathe hard and deep in order to distract his attention, or else to pretend he is urinating in order actually to open the muscle. Gradually and by little jumps the muscle gives way, and it is amusing to feel the record of its unwilling submission transmitted by the fluid to the piston; though annoying as sometimes happens, it suddenly, and for no apparent reason, shuts down and refuses to admit any more fluid. When the syringe is empty it is refilled and a second and a third injection made until the bladder is full. The necessity of refilling the hand syringe is its one disadvantage as compared with the tank; but this is outweighed by the advantage of controlling pressure at will and adapting it to the needs of the case.

In selecting the method of washing the posterior urethra suitable for a given case several points are to be considered. In an acute case of gonorrhea the pressure necessary to force the cut-off muscle is calculated to bruise the inflamed urethral wall more than the gentle massage of a soft-rubber catheter, and, accordingly, an untimely epididymitis is more to be feared from forced injection. In chronic cases, moreover, while one need not fear the testicle, there is little to choose in efficacy between the two methods; and yet the catheter is a shade safer and a good deal easier to manage, so my usual preference remains with the catheter. Yet I have seen chronic cases that are apparently benefited by the searching effect of the forced injection, which drives the antiseptic fluid into all the wrinkles of the urethral wall while at the same time applying hydrostatic massage. It is well, therefore, always to bear in mind this possibility and to test the efficacy of forced injection if the catheter fails.

You are, of course, familiar with the method of irrigation with the ordinary syringe? The patient is instructed to breathe deeply and strain as if voiding urine; the doctor meanwhile forces the fluid below the cut-off muscle. One, two or even three syringefuls may be injected in this way until the sense of distress in the bladder shows that it is full. Always irrigate the anterior urethra thoroughly before forcing the fluid further backwards.

In excessive alkalinity of the urine, ammonium benzoate, 4 to 5 grains three times daily, is the best remedy.

We believe that the biliary salts are of extreme value in typhoid and should not hesitate to use them in conjunction with the sulphocarbolates.

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QUERY 5465.—"Flat-Foot." J. M., Illinois, desires to know who makes the shoe for cure of flat-foot recommended in a recent article in CLINICAL MEDICINE.

This is manufactured by the Anatomik Footwear Company, Shelton, Conn.

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QUERY 5466.—"Incompatibility and Synergism." W. T. E., South Carolina, writes: "I wish you and your readers would analyze a prescription containing the tinctures of conium, opium, hyoscyamus, cannabis indica, stramonium, aconite, belladonna and ignatia amara. Let us hear from our alkaloidists and the editor. I want to know if it is properly synergistic and free from incompatibles?

It is beyond the bounds of my imagination to conjecture what this prescription could possibly have been written for, unless it may have been for neuralgia; since the majority of the ingredients are sedatives and a combination of sedatives with ignatia might have been prescribed for that purpose. It it a fine example of shotgun dosing.